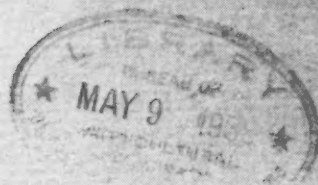


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The **PHOTO-**

LITHOGRAPHER

April 1938

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A full description of the manufacture of inks and fine dry colors and helpful suggestions for the elimination of many offset ink troubles are given in our booklet "Inks, Lithographic and Printing", which we will be glad to send on request.

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Senelith Fast Red Toner 229P not only prints a rich red even under trying conditions that will cause some other reds to look pink, but it stays red. It has maximum tinctorial strength and easy working qualities.

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32-34 GREENE STREET
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Scotch Slips
Scotch Tape
Scraper Leather
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Etc, Etc.

FOR INSTANCE CONSIDER

ANTIFIN RUBBER PRESERVER

The acids and chemicals of lithographic etches attack rubber and if left unchecked on the blanket will seriously impair its essential properties. The antidote for this is Antifin Rubber Preserver.

The color pigments of lithographic inks have a chemical affinity for rubber. They penetrate the rubber composition of the blanket, swell its surface and will, if unchecked, eventually destroy many of its important physical characteristics. To counter-act these detrimental reactions the blanket should be regularly treated with Antifin Rubber Preserver.

The lint and dust coming off printing paper settles on the blanket and interferes with the lithographing process. This accumulation on the blanket should be washed off regularly with clean water and then the blanket should be treated with Antifin Rubber Preserver.

Gasoline when used for washing blankets dissolves the rubber as well as the ink. The unfavorable effects of this action can be mitigated by applying Antifin Rubber Preserver after washing with gasoline.

In addition to unfavorable chemical reactions, offset blankets are also subjected to harmful mechanical reactions. The most common effect of these is embossing. This is caused chiefly by plates containing type matter. Its detrimental effects can be mitigated by treating the blanket about three times a day with Antifin Rubber Preserver.

Antifin Rubber Preserver is a scientifically prepared non-injurious chemical solution which dissolves ink and preserves rubber; it enables rubber offset blankets to retain their natural properties and lengthens their life considerably.

Antifin Rubber Preserver is a thick liquid which evaporates slowly when applied in full strength to the blanket; it corrects swellings, blisters and tackiness.

Antifin Rubber Preserver remedies embossing effects on offset blankets without leaving any low spots; it reconditions the rubber without harming it.

Antifin Rubber Preserver is economical in use. One pint of it suffices to treat a square yard of offset blanket for about one month; it is packed in gallon cans at \$4.50 per gallon; in half-gallon cans at \$5.00 per gallon; in quart cans at \$1.75 per quart and in pint cans at \$1.00 per pint.

THE SENEFELDER COMPANY, Inc.

32-34 GREENE ST.

"Everything for Lithography"

NEW YORK, N. Y.

THE PHOTO-LITHOGRAPHER

*Published in the Interests of Lithographers
to Increase Sales, Efficiency
and Quality*

WALTER E. SODERSTROM, *Editor*

DONALD L. GUTELIUS, *Associate Editor*

SAMUEL D. WOLFF, *Advertising Manager*

Volume VI

APRIL, 1938

Number 4

What You Will Find in This Issue

L. N. A. Will Hear Prominent Speakers	13	Flashing	
A Good Picture File Will Help		<i>Theodore S. Hiller</i>	36
<i>Edward C. Sterry</i>	14	Failures and Remedies in Half-tone Pro- duction	44
New Techniques	16	More About Technical Vs. Rule-of-Thumb Methods	
Labels Plus Responsibility		<i>Professor Robert F. Reed</i>	46
<i>Charles R. Cosby</i>	17	N. A. P. L. Will Meet in Washington	52
The Making of a 24-Sheet Poster	18	Importance of Offset Press in the Graphic Arts	54
Modern Trends in Offset Printing	20	<i>Adam Henri Reiser</i>	
Photo Grouping for Offset		A Tale of Estimating	
<i>A. E. Hurst</i>	22	<i>Latham B. Myers</i>	58
Accounting and Tax Questions		Studies in Sales Management	
<i>Herbert H. Levens, C. P. A.</i>	24	<i>William Wolfson</i>	62
Septenary Ad Copy Chart	25	Equipment and Materials Review	66
Streaks		Lithographic Abstracts	74
<i>C. W. Latham</i>	30		

Official Organ of the National Association of Photo-Lithographers.
Published by The Photo-Lithographer, Inc., 1776 Broadway,
New York, N. Y.

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year in Canada. Single copies 30 cents.

Acceptance under the Act of June 5, 1934. Authorized November 14, 1935.
Other publications issued: The Photo-Lithographer's Manual, priced
at \$4.00 the copy.

MR. PRINTER:
Your customers will be glad to hear
this story from you. See page 41

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From A to Z

You'll find

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—concerns that have found enthusiasm for Zenith, the modern litho plate grainer, extending from the graining department to the president—from the craftsman's pride in a fine piece of work to the president's appreciation of Zenith's help in increasing sales through more efficient production.

Because the commendatory letters we have received from lithographers would make a good sized book. —

Let Us Give You a Few Excerpts Just from the "S" Cheering Section

"After outfitting our Rochester plant with your graining machines and noticing the beautiful work we obtained from them, we decided to outfit our San Francisco factory with your Zenith Grainers, of which we have just installed two. . . They are certainly a revelation to our San Francisco factory in the amount of work they do and the quality of the grain which is perfect, and, as you know, the grain of the plate is the foundation of printing fine work by the off-set process. We are now 100% Zarkin Zenith Grainers in both our Rochester and San Francisco plants."

— STECHER-TRAUNG LITHOGRAPH CORPORATION

"Referring to your letter of January 27th, regarding the three Zenith Graining machines, which you installed for us, we are very pleased to advise you that these machines have been operating very satisfactorily, and the plates which they produce are of uniform quality. We also wish to thank you for the very fine service that you have given us on these machines. It is a pleasure for us to recommend these machines to anyone contemplating their purchase."

— THE STROBRIDGE LITHOGRAPHING CO.

"We have been using your Zenith graining machines since 1930 and we are pleased to say that we have found them entirely satisfactory. These machines are very smooth and quiet in operation, very efficient in the production of graining plates, and they have never caused us any delay the entire time we have had them. Through the use of the patented dumping devices we are able to consistently use steel marbles to better advantage, by putting them in the machine without scraping the plates. We are able to recommend your machine any time, as we consider it the best in the market."

— SCHMIDT LITHOGRAPH COMPANY.

Literature on Zenith equipment and rebuilt presses will be sent you on request.

ZARKIN MACHINE COMPANY, Inc.

Manufacturers of ZENITH
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**It's so dependable for camera and
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- 2. MAXIMUM CONTRAST**
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THE PHOTO-LITHOGRAPHER

*Published in the Interests of Lithographers to Increase
Sales, Efficiency and Quality*

Volume VI

APRIL, 1938

Number 4

L.N.A. Will Hear Prominent Speakers

THE following speakers will address the members of the Lithographers National Association at the 33rd Annual Convention, to be held May 10, 11, and 12, at The Homestead, Hot Springs, Va.:

Frank W. Lovejoy, sales executive of Socony-Vacuum Oil Co., who is well known for his stimulating, sales-minded speeches;

William R. Kuhns, Editor of *Banking*, the Journal of the American Bankers Association, who will discuss specifically the problems of the bank and commercial stationery producers;

Miss Pauline Arnold, Vice-president of the Market Research Corporation of America, whose contributions in the field of market research have been outstanding during the last twelve years;

Elliott Odell, advertising director of Fawcett Publications, who will discuss important opportunities for the expansion of lithographic sales volume;

Albert E. Haase, associated with Townsend & Townsend, Inc., Advertising Evaluators, New York, who was a co-director with Dr. Miller McClintock of the recently completed National Window Display Research;

Frederick L. Wertz, president of Window Advertising, Inc., New York, Display Installers;

Arthur E. Tatham, advertising manager of Bauer & Black, President of the Chicago Federated Advertising Club, and an instructor in advertising at Northwestern University.



WILLIAM R. KUHNS

Editor of "Banking," the Journal of the American Bankers Association, who is being sponsored by the Institute of Bank Stationers to discuss the problems of the bank and commercial stationery producers at the forthcoming 33rd Annual Convention of the Lithographers National Association. Mr. Kuhns is well known as an expert in the discussion of general economic and financial conditions, and his tailor-made presentation for bank and commercial stationery will appear against the background of a thorough and first-hand knowledge of current business conditions.

A GOOD *Picture File* WILL HELP BUILD ACCOUNTS

By EDWARD C. STERRY



"Rush Hour at the Pigs Kin Cafe." Photo by the Author

THERE are three (at least three) profitable phases of selling photo-lithography. First: selling the simple, black-and-white one-time job; second: selling the creative idea, and third: selling an account.

Of course, no salesman will deny that the most profitable of these is the account. But an account requires more patience, more time, and a closer application of knowledge and resources. It also requires more attention and a more thorough understanding of the client's business, his methods of operating, and his merchandising setup.

The salesman who sets out to sell an account need not worry about the other two phases—the job or the creative idea—so long as he has the backing of a good production department and a good "on-his-toes" idea man. These are two of the necessary tools with which to build an account. However, there is one instrument which is not found in every creative department but which should be within the reach of every lithographic salesman. That is, a picture file—a source of illustrations from which can be taken pictures suitable for expressing certain thoughts or generally enlivening the copy.

The fact that it takes years to build a useful morgue is perhaps the reason that not more of them are found among the photo-lithographers. But when you consider that pictures are the very life-blood of photo-lithography it is still surprising that so few photo-offset concerns possess a definitely organized source from which to obtain pictures on which

there are no restrictions, and which may be used with clear profit to the house.

Building a morgue is a long, tedious process and a job which requires constant attention. From time to time the writer started gathering pictures some ten years ago and is still adding to the collection, at the same time withdrawing the obsoletes. The most rapidly changing pictures in a file are those of fashions, which need constant revision.

It requires practically no more work to organize a complete morgue than it does to build one containing only pictures suitable for direct reproduction. Therefore, let us consider a picture file which offers a service to clients as well as furnishes a source of inspiration to the artist or creative man—and the salesman.

What kind of pictures shall be gathered and how shall they be filed?

The question of copyright is always an important consideration when selecting pictures for direct reproduction by any process. However, there are many illustrations appearing in printed advertisements which can be used without any controversy.

I started a picture file first by clipping from every available publication illustrations which expressed a certain thought or emotion, or which applied, directly or indirectly, to a product or season. After I had gathered pictures for about three months the classification process started. This was done through the use of various 8½ x 11 letter file folders. Each one was used for a certain classification such as "Auto Accessories," "Houses," "Men at

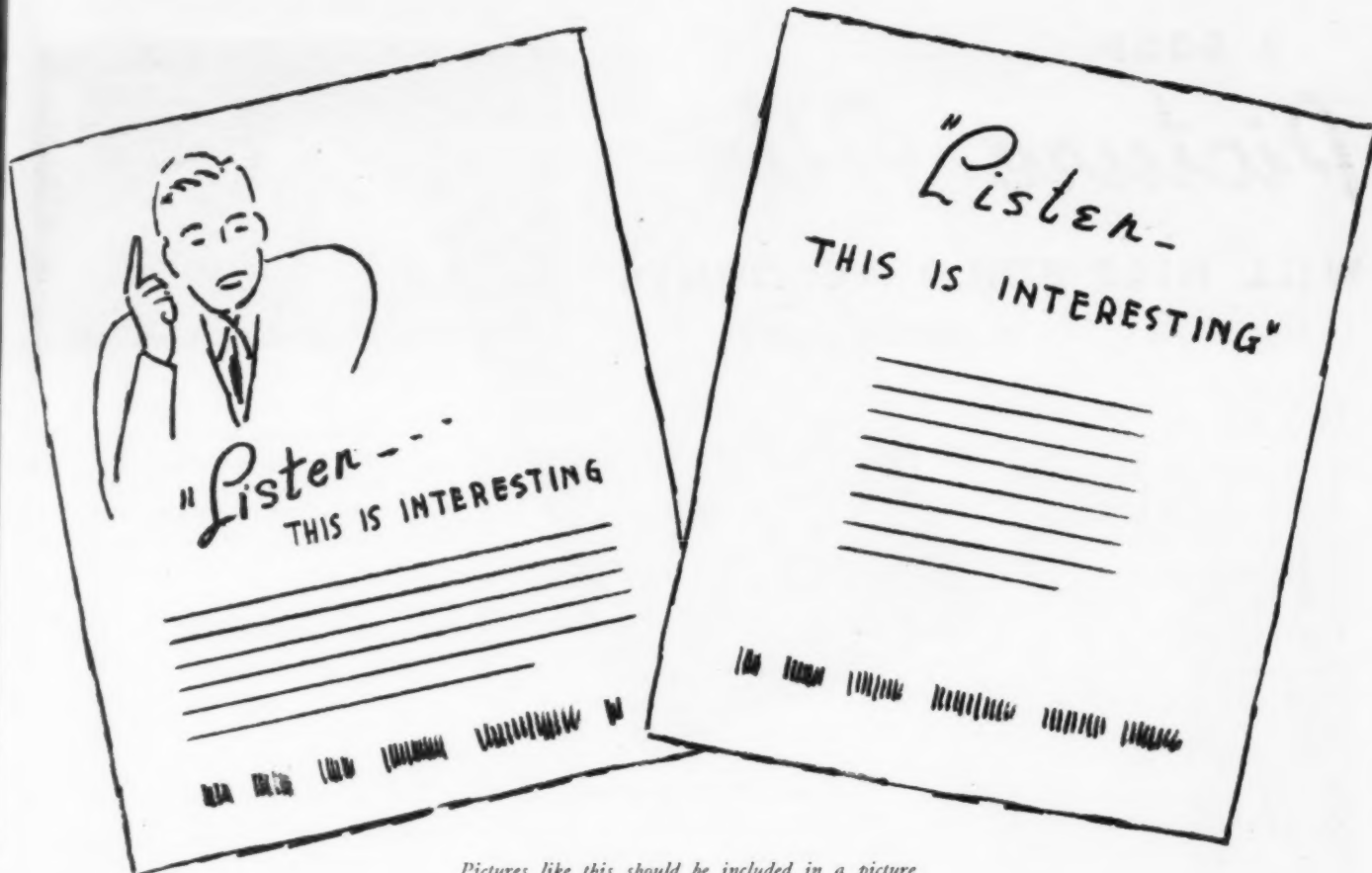
Work," etc. Of course such classifications could go on ad infinitum. However, after using the picture file for several years I have found that about forty classifications will take care of almost any need. These classifications are best determined by the person building the file.

It is better to first place these clippings in this temporary file because, in the process of building the permanent setup, it will be found advisable to revise many of the classifications.

In building the permanent file I use regular tab folders for letter filing, the tab being just large enough on which to place a numeral. These can be numbered consecutively from one up. After the classifications are finally established they should be recorded in an alphabetical index book, and each classification given a number corresponding to the numbers on the tab folders.

In doing the final filing each clipping should be pasted on an 8½ x 11 white bond sheet, preferably 16 lb., to conserve space. Each white sheet should be filled up with clippings of that particular classification. Be sure to place the proper index number on every sheet. This is important so that when the sheet is removed for any purpose it can be readily placed back in the file in its proper position. If this is not done, and the sheets are returned to the file improperly, the quick reference index book may soon become useless.

A picture file like this can be made more useful by cross indexing and breaking down into finer classifications. For instance: pictures of food



Pictures like this should be included in a picture library. They tend to attract attention and enliven the copy. Note the difference when no illustration is used.

products completely indexed may be found under several index numbers.

A picture of a pineapple for example, will be found only in its respective classification. But its particular file number should also be found under "Food Products." This cross reference should be definitely shown in the index book. Complete breakdown of classification can be applied to many subjects.

For photo-lithography it will be found most useful to include in the picture file some examples of decorative material and handlettered styles. Of course, the contents of the file may

be varied according to the special needs of each particular concern. For example, a concern having a large number of machinery accounts would do well to include in its picture file several machinery catalogs. And of course, a picture file should be augmented by the various representative cut syndicates. However, I have found that regardless of the extent of the offerings of the various cut sources an intelligent "home-made" library of pictures always has something to offer which cannot be found elsewhere.

To the salesman with a photo-

offset clientele I would say that an extensive picture file in the creative department will give you a sense of added confidence in the knowledge that your customers' offset jobs can be effectively illustrated at a minimum cost.

Yes, it takes tools to build an account. And a good picture file is one of the tools to use. If you broadcast the fact to your customers you will find them leaning toward your concern. All of which is just so much brick and mortar in the building of a lithographic business.

Two Lithographers Win Cantine Awards

Two lithographers participated in the annual awards made by The Martin Cantine Company, Saugerties, N. Y., for the most outstanding skill shown in 1937 in the use of Cantine's coated papers.

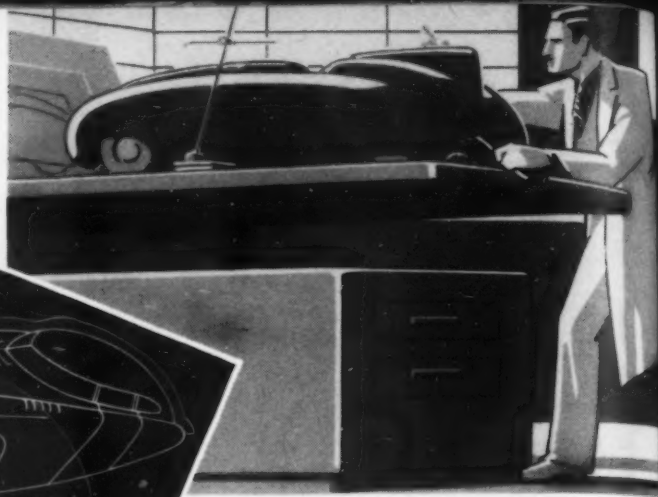
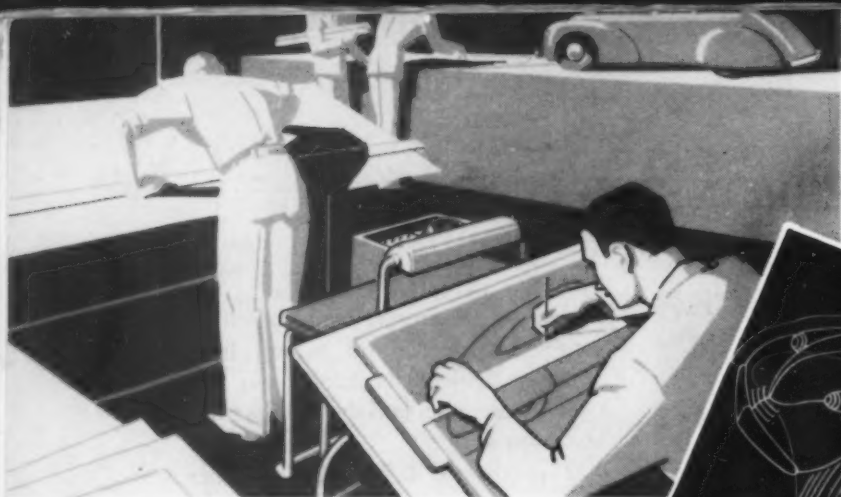
The judges decided that the most outstanding booklet produced on a

Cantine paper in 1937 was "Mystic Entrees," produced for the Canned Salmon Industry, Seattle, Wash., by Schwabacher Frey, also of Seattle. The booklet was lithographed in full color on Cantine's M-C Folding.

A display for "Cutex," considered

most outstanding among all displays done on a Cantine paper, was lithographed in 22 colors by LaPidus Printing & Lithographic Co., New York. Cantine's LithoGloss was used.

The Cantine Awards have been made annually since 1922.



NEW TECHNIQUES



"Out of the merger of art, science and industry have come new techniques that have within themselves the ability to create an entirely new pattern and setting for the life of the world."

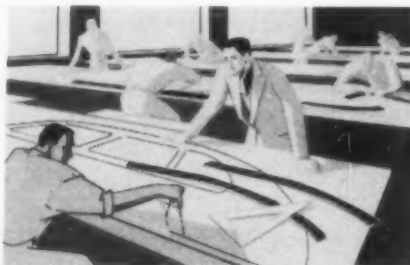
All of the illustrations on this page are from "Modes and Motors," including the cover and a typical inside spread. The booklet was printed in three colors on cover—black, red, gray, and two colors inside—black and terra cotta. There are 32 pages, 5¼" x 8¼". The stock is 70 lb. inside; 150 lb. for cover, both white.

Copy, cover design, and layouts were handled by Bartram D. Lewis of G.M.C.'s Department of Public Relations. The drawings were made by members of the General Motors Styling Section. Lithographing was done in an air conditioned pressroom.

AST MONTH

The Photo-Lithographer mentioned the brochure, "This Is Toledo," as an exceptionally meritorious photo-offset job from the standpoints both of fine imaginative conception and first-class mechanical production.

In contrast to that job, which achieved excellence with the use of amateur photographs and no art work, we present this month a beautiful booklet issued by General Motors Corporation. It presents its story of how General Motors cars are designed, prefaced by a brief history of art from 50,000 years ago up to the present very general application of artistic principles in industry, in a manner noteworthy for its artistry, obtained through combination of beautifully done drawings, unusually incisive in line and as modern as a new car; fine typography; a Parma finish offset paper; and first-class photo-offset reproduction.



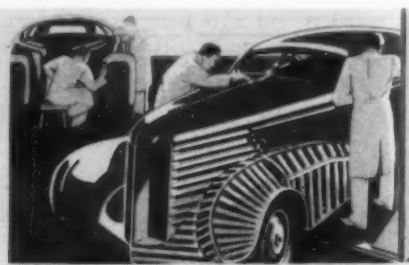
WORKING DRAWINGS

As a final check on the interior plan, a "rim back" is constructed—a skeleton framework built in accordance with the proposed interior measurements and arrangement. It serves an important purpose by providing an actual reproduction of the head room, seat width, seat depth, leg room and other dimensions that will be present in the finished body.

If changes seem necessary they are indicated on the full size chief drawings. Then, with the external outlines of the car established, tracings of the blackboard drawings are made on vellum paper and turned over to the drafting room staff.

Here the work is divided between two groups. One group prepares full-size working drawings of the contours of the car, using the vellum tracings. Another group concentrates on making drawings of details such as bumpers, emblems and headlights. Both activities are carried on simultaneously by skilled and experienced draftsmen. As time goes on and the design progresses through the various stages of full-size clay model, wood model and finished body, these men will revise and keep up-to-date the early working drawings they are making here. On their accuracy and care depends the success of the final design in production.

20



FULL-SIZE MODELS

Through the preliminary stages of design development miniature scale models provide a ready means of translating the idea and sketches of the artist into three-dimensional form. But later, when the new design approaches its final stages, full-size models may be made in order to be certain that the design is entirely harmonious.

Using the working drawings prepared in the drafting room, a full-size model is carefully built up out of clay, over a wooden form. Some parts of the work go rapidly; others, such as details of the fenders, radiator and rear contours require endless hours of experimentation. On the same body shape innumerable combinations of fenders, lighters and grilles may be tried out before arriving at the one combination that is satisfactory in all respects.

No door or window glass is installed in this model, and the interior is rough and unfinished. But every detail of the exterior surfaces is carefully and accurately worked out, so that from the standpoint of size and exterior design this clay model is an exact replica of a finished car.

With the last minute changes made, templates* and patterns are taken of every curve and contour for use in the construction of the hand-made wood model described on the following page.

* Pieces of wood cut out to fit over a section of the body, reproducing its curves exactly.

21

LABELS PLUS RESPONSIBILITY

By CHARLES R. COSBY



CHARLES R. COSBY

We have received so many questions regarding the textual make-up of labels that will fairly identify various kinds of products that we asked Charles R. Cosby, Executive Secretary, Label Manufacturers Association, 60 East 42nd Street, New York, to prepare the article which appears on this page.

Mr. Cosby, in addition to being an attorney and therefore very familiar with all the legal aspects of what does and what does not constitute proper label copy, is particularly well fitted to advise on this important matter because of his intimate connection with the Label Manufacturers Association.

—The Editor

LABELS carry the messages by which physical objects describe themselves. Public opinion therefore demands certain minima of truth and accuracy. To prevent false or misleading representations, many substances are required by law to be labeled adequately to inform the public regarding the true character of these substances. Laws also contain provisions that certain substances, if labeled, shall be honestly and correctly labeled. The sources of law are either Federal, State or Municipal.

The characteristics which are usually made the subject of statutory regulation are (1) the quantity in the container; (2) the identity of the sponsor; (3) the quality of the product; (4) the care necessary for safe use.

In respect to quantity, many States have laws which apply to every substance sold in containers or in package form. These laws prescribe the manner of declaring the net contents, either by weight, measure or numerical count, and they prescribe penalties for misbranding in respect to contents. The Federal laws are of the broadest scope because they affect interstate commerce. The principal statute is the Federal Food, Drugs and Cosmetic Act which now covers most substances for human use. There are also Federal statutes covering the labeling or branding of meats, fish, oysters, animal foods, caustic poisons and insecticides.

Most of the states have also enacted food and drug laws patterned after the Federal law. Generally, a substance that is properly labeled under the Federal law is also properly labeled under the State law, although in some cases the State laws contain additional or different provisions. Most of the States also have their own pharmacy laws which, so far as they relate to the labeling of drugs and poisons, are in accord with the Federal law. The States also have their own laws controlling the sale of narcotics and habit-forming

be named pet animal foods, stock or commercial feeds and tonics, live-stock remedies, fertilizers and so-called economic poisons for destroying insects or pests.

The labeling of fabrics and other substances not sold in package form is not usually required by law but if found falsely labeled, they can be reached by the laws which require honesty in advertising. There is a growing tendency to increase the legal requirements so as to compel complete disclosure regarding component materials and their qualities.

Labels which merely identify the source of certain articles, such as cloak and suit labels, are mere symbols representing certain standards or reputations which have been advertised in connection with such sources.

Certain devices are required by law to be placed on labels to protect the public; for example, Poison Labels. Among the things which may not be placed on labels are representations of the flag of the United States or of any State. The Federal Alcohol Administration has proscribed a number of subjects which may not be depicted on any label for alcoholic liquors.

The Federal Trade Commission has approved trade practice conference rules establishing standards and labeling requirements for jams, jellies and preserves.

Quality standards of certain products are indicated by Seals of "approval," furnished by Good Housekeeping Magazine or the American Medical Association.

A label is more than a scrap of paper and a splash of ink; it is more than a haphazard combination of type and art; it is the bearer of either true or false imputations; it holds the key that unites two realms—the realm of fact, substance, authenticity, with the realm of thought, imagination, conviction. To compose a proper label is a responsibility not to be lightly assumed; it might put something in a wrong category; it might even put somebody in jail.

THE MAKING OF A 24-SHEET POSTER

THE illustrations on this and the facing page, reproduced through the courtesy of McCandlish Lithograph Corporation, Philadelphia, illustrate the main steps necessary in producing a 24-sheet poster. They are taken from a booklet recently published by McCandlish to keep alive in the minds of advertising men and fellow craftsmen the

graphic story of large poster production that has been presented all over the country by the McCandlish movie, "The Making of a 24-Sheet Poster."

Start with the column running across bottom of both pages, and read from left to right.

To insure the maintaining of McCandlish Standards of Faithful Re-production, inks are ground and mixed right in the McCandlish plant. Each sketch is brought to the ink chemist.



Formula samples are made and the color values in the sketch are determined.



Color roll-outs are made to match each color in the sketch.



The ink is ground and mixed in press quantities to match the chemist's formula samples.



... is placed the half-tone screen.



The negatives are placed before process artists for retouching.



Every metal plate must be carefully prepared before it goes before the projecting machine.



Each plate is counter-etched or sensitized.



The plate, now bearing the traced outlines, is taken to the plate art department for keying and marking for lights, shadows, etc.



The plate returns to the hand press for printing of completed key lines and markings onto a new paper sheet.



The paper sheet is now dusted with red chalk, the chalk dust adhering to the inked outlines.



The chalked outlines are now transferred to as many plates as there are colors on this particular portion of the poster.



Generally the advertiser and his agency cooperate in the development of the poster idea. The basic idea arrived at, the agency art director or account executive calls on the artist ... in this case, Frederic Mizen.



After completion and final approval, the art work is forwarded to the lithographer, McCandlish Faithful Reproductions are possible because of this modern, finely equipped, well manned and conveniently arranged plant.



When the art work reaches the McCandlish plant, it is brought to the plant superintendent to be laid out in sections for reproduction.



When the poster is to be produced by straight crayon lithography, the sketch is then taken to a camera room and photographed for a lantern slide.



VOLUME TIGHTLY BOUND

been
movie,
both

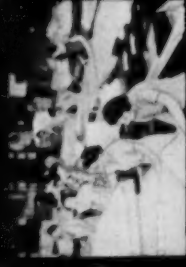
panels for final check-up and
okay.



When the poster has been
checked, the lithographed
sheets are delivered to the
finishing department where
they are jogged, trimmed and
cut.



The sheets are folded and
collated. All the sheets of one
poster are gathered into one
unit and numbered in proper
sequence for the convenience
of the billboard.



The collated posters go to
the shipping department for
wrapping, weighing and label-
ing.



is clamped to the press plat-
ter.



Water is supplied to the
dampening rollers. (Notice the
ink fountain above the damp-
ening rollers.) Now the press
is started.



As the lithographed sheets
come from the press they are
racked to prevent sticking.



Press sheets are continually
checked and okayed by artists
for color and detail.



is secured by centrifugal force
in a whirling vat.



A negative is placed in the
projecting camera and a pho-
tographic print is made on the
sensitized plate.



The "Picture"
on the plate is developed.



From this point, plates,
whether made straight or pro-
cess, receive the same treat-
ment. They are etched in
identical processes.



all new designs with crayons
drawn directly on the metal
plate.



In the lettering art depart-
ment the final plate art work
is done and plates are made
ready for the plate etcher.



Up to this point when a
photographic process instead
of straight crayon plate re-
production is necessary, the
sketch follows a different rout-
ing. The sketch is first placed
before a camera and color
separation negatives are made



Across the mouth of
the huge camera bellows...



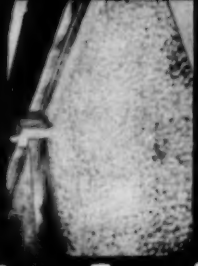
the enlarging lantern.



Outlines of sketch projected
on the sheets are carefully
traced.



Interrupting the progress of
the sketch for a moment we
see how zinc plates, from
which the final lithographing
is done, are grained by rotat-
ing steel marbles working in
water and silicate sand.



We now return to the paper
sheets. Beating traced out-
lines, they are taken to a hand
press where these outlines are
transferred to the grained
metal plate.



Modern Trends

IN OFFSET PRINTING

HARVEY GLOVER, secretary and treasurer of Sweeney Lithograph Company, Inc., Belleville, N. J., who is considered one of the best informed technical men in the lithograph industry, was one of four nationally-known graphic arts authorities who addressed members of the New York Employing Printers Association at a production dinner March 21, held in connection with the Association's annual exhibition of "Modern Trends in Printing and New Developments in Equipment."

Mr. Glover's address follows.

Employing Printers and Friends:

I am glad to come here tonight to offer my small mite of information to the general fund of knowledge regarding offset lithography, and particularly, to try to throw a small beam of light on what has been assigned to me as my subject, namely "Modern Trends in Offset Printing."

I derive a great deal of satisfaction and pleasure from my efforts to keep pace with the new improvements and the constant changes that take place in the offset lithograph industry, but one would have to be a superman to keep abreast of all the improvements.

It is difficult to know where to begin, so wide-flung are the modern trends. If I were to go exhaustively into half the new trends, I would keep you here much longer than you would want to stay. So I will just try to touch briefly the high spots concerning some of the major features.

Now, as a matter of fact, offset in itself is a "Modern Trend." The practical application of offset to the printing industry dates back just a comparatively few years. Measured in years, the time is exceedingly brief, but measured in terms of progress, the forward steps are marked by numerous gigantic strides.

To mark out and identify any one or two particularly vital advances in

the past couple of years would constitute a difficult task. It is not so much that any one or two or even more advances stand alone, but rather the progress of offset lithography during the past few years is due to an accumulation of many improvements, some edging on major proportions and many more, small in themselves, but bulked together, that total a vast step forward.

One obvious and especially noticeable "Modern Trend" is the entrance into the field of many more offset presses.

I do not refer so much to the single color press as I do to the two-color presses, and to the large number of four-color presses. This indicates, unmistakably, the feverish desire of the printer to place himself, so far as presses are concerned, in a position to take advantage of every opportunity both for speed and economy of production.

If you would call the presses the major portion of the equipment, I suppose no paper or ink man would feel that I disparaged or minimized his function if I referred, merely for the sake of brevity, to paper and ink as accessories—but most vital and indispensable accessories.

The development of better inks has helped immeasurably to push the ideal of quality ahead. We now have offset inks with much better working qualities, tintorial strength, and cleanliness than have heretofore been available—offset inks that produce a pleasing and satisfactory gloss, inks that can be worked and handled with a minimum of trouble.

And, likewise, papers have been greatly improved to fit offset requirements. New coatings and new plate finishes have been developed to suit and meet the definite characteristics of the offset press. And in paying tribute to the success of the offset press, it must not be overlooked for a minute that what the offset

" . . . the printer of today is only partially modern if he is without an offset department . . ."—but—" . . . the printer who believes that he may become a lithographer merely by installing offset equipment is doomed to bitter disappointment . . ."

press has achieved could not have been accomplished without the many supporting factors such as photographic developments, plate making devices, and numerous other preliminary essentials.

During the past year, rapid strides have been made in the department of color photography. Kodachrome is a comparatively recent addition to offset reproduction and certainly is in the front rank as a "Modern Trend." And, although its introduction is of very recent date, it is being used with very gratifying results.

In the department of plate making, rapid developments have taken place. These new developments show themselves in many ways, but particularly because they give longer life to the plates and because they make possible a much higher quality of reproduction. These new developments didn't "just happen." They are the result of new chemicals devised as a result of deep study and intensive research by trained and skillful men.

The deep etch plate for offset printing has long since passed through the experimental stage. Its performances through actual experiences have been such as to stamp it as a definite and permanent fixture in the lithograph industry.

Another satisfactory development in plate making has been brought about by staging and dot etching on glass positives. This gives the offset process practically the same advantage as the photo-engraver has when he color corrects on his copper plates and this is indeed a long step forward toward the improvement of offset work.



HARVEY GLOVER

Now, I realize that a great many men in this audience are printers who are probably interested in the question of whether or not to install offset equipment. It is my personal belief that any modern printing plant should have offset equipment. And if you do acquire an offset plant, you should give as much attention to the personnel that operates it as to the equipment you purchase.

It seems to be a "Modern Trend" to install an offset department and expect it to operate without the aid of trained lithographers.

Another thing that may arise at this point is whether or not the printer should have his own plate making department. In my humble opinion, he certainly should have it if he intends to give the quality and service the buyer of today has been

schooled to demand. Of course, he always has the alternative of having a trade house take care of his overflow, but with his own plate making department, he has the opportunity to develop that very essential and much sought after factor of individual quality which is part and parcel of the offset press.

The installation of an offset department means much more than merely the installing of the mechanical equipment. The process of plate making is so entirely different in structure from that of plate making of the relief type, that it imperatively requires men specially trained for this branch of the industry. All these elements—the equipment, the men and the chemicals—must combine harmoniously if satisfactory work is to be the result. If one of these ele-

ments is lacking, and if all three do not work in complete unison and harmony, then good work is impossible.

Offset lithography is in its ascendancy and offers for consideration a modern phase of printing. Offset today is acclaimed as the "Modern Trend" of printing. Offset is not as new as the constantly changing effects it will produce for you. The method itself is well established, so much so that the printer of today is only partially modern if he is without an offset department.

What offset will do for you is to expand the possibilities of your printing plant. And many times it will produce its result at a lower cost than would be possible by the letterpress method. On the other hand, the records show with equal clarity that a printer who believes that he may become a lithographer merely by installing offset equipment is doomed to bitter disappointment.

There are changes taking place constantly in letter press and in offset and these improvements are maintaining a steadily rapid pace of advancement.

So, let me say in conclusion that offset is modern and like all things modern, its evolution stalks with gigantic strides. To keep in step with, or a step ahead of the procession, the offset printer must not only avail himself of the most modern equipment, the most skillful craftsmen, but he must be eternally vigilant in his quest for new and improved methods and processes.

He must be sensitive to the new revolutionary ideas and quick in sifting the good from the bad in all suggested improvements. Otherwise, he may wake up some morning to find that the parade is a step or two ahead of him.

If I have added anything to your store of knowledge or if I have, in any way, quickened your interest in offset—I am thankful. Anyhow, I am grateful to you for having listened and may I add that I shall be available to answer any questions following this meeting. That is, I'll answer the questions, if I know the answers to them. Thank you.

Photo Grouping for Offset



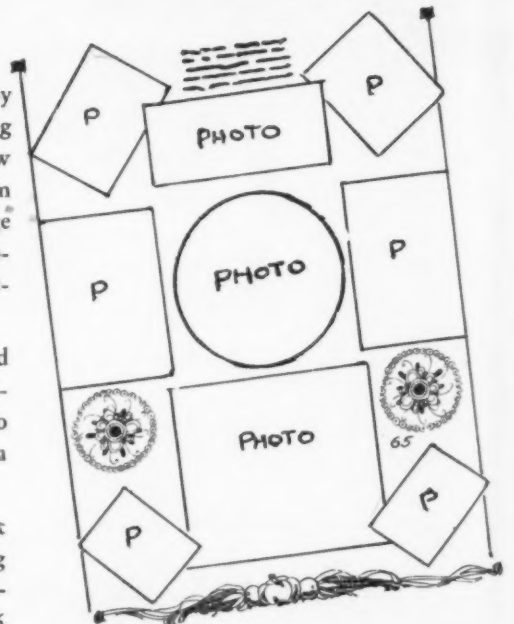
Lithographs as used by leading department, drug and specialty stores of New York are not only shown on the accompanying page but also a pleasing photographic group arrangement.

This arrangement is secured by the pasting of line pictures and type matter onto the original to make it a part of the whole.

Information which may act as a guide in producing similar results follows:—original size 12 in. by 16 in. The nine photos of varying sizes show lines around them painted in white. Nine line pictures were embellished as illustrated. Heading, hand lettered script on white. Type matter set in 18 point Garamond Bold.

When descriptive matter is desired under each photograph, space for this purpose should be allotted accordingly. Compare this layout which is so practical for offset printing with the slip shod, careless arrangements so often used.

Photographs through the courtesy of the Worsinger Service 110 West 40th St. N. Y. This company photographs over 1000 interior and window store displays monthly. It's a service of interest to all lithographers, manufacturers and advertising men.



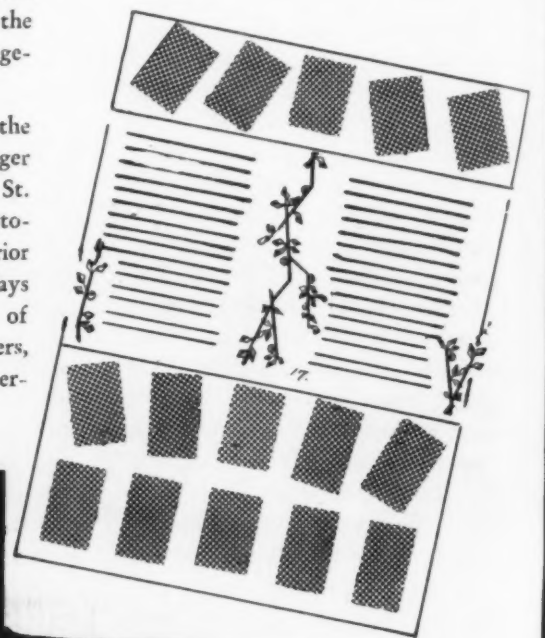
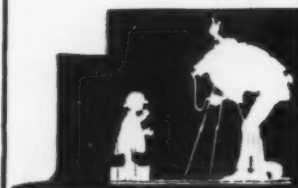
Economically, offset for the reproduction of photographs such as school year books and other printing having a limited run, is meeting an increasing demand.

Opportunities for doing a pleasing job by irregular grouping in combination with line drawings are demonstrated in the accompanying visuals.

Both are designed to prevent monotony in appearance which is especially desirable where pages of photos are to be repeated.

**A
TIP**

Irregular grouping of photos prevents monotony in the page appearance.



Lithographs Attract Shoppers



Photo Arrangement in Combination with Line Illustrations (see comment)

ACCOUNTING AND TAX QUESTIONS

Conducted by HERBERT H. LEVESS, C.P.A.

Q. What is the present status of Social Security taxes?

A. *Old Age Benefit contributions* are payable regardless of the number of employees. The rate is 2%—1% by the employer and 1% by the employee—and is applicable to the first \$3,000.00 paid to each employee. The tax is due quarterly and is payable within thirty days after the end of the respective quarter.

UNEMPLOYMENT INSURANCE CONTRIBUTIONS to the New York State fund are required of employers who have had in their employ four individuals during each of fifteen days within the calendar year. The tax rate is 3% on the first \$3,000.00 paid to each employee, and is payable entirely by the employer. Remittances are due for each month on the fifteenth of the following month. Wages paid to the spouse or minor children of an individual employer are exempt. Information returns, showing the name, account number and earnings of each employee, are due quarterly.

Unemployment Insurance contributions to the federal government are required of employers who have had in their employ eight individuals on twenty days during a calendar year, each such day being in a different calendar week. The tax is 3% on the total earnings of all employees, and is payable entirely by the employer. Wages paid to the parents, spouse or minor children of an individual employer are exempt. Returns are due in January for the preceding calendar year.

Credits against Unemployment Contributions

1. All unemployment contributions made to state funds may be deducted from the federal tax up to 90% of the amount payable to the federal government.

2. Beginning with the calendar year 1938, any employer who is liable for unemployment contributions to the federal government and who has, during any calendar year,

We have arranged to have Mr. Leveess answer in this column questions on accounting and taxes which readers would like to submit. Mr. Leveess has been practising for ten years in the field of public accounting and is a member of the New York Bar.

contributed to the New York State Fund more than 2.7% of wages paid during that year may receive a refund, or a credit, for such excess by making proper application. The first refund, or credit, under this provision will cover the calendar year 1938 and applications therefor will not be made until 1939. The substance of this provision seems to be that where an employer is required to contribute to both the New York State and federal funds, contributions to the federal government for wages paid to employees within the state will be refunded by the state.

Q. What is the status of a person employed by two or more firms, insofar as Social Security taxes are concerned?

A. The wages paid by each employer are taxable as if each such employment were the sole source of income to the employee. There was a distinction prior to January 1, 1938, with respect to New York State unemployment contributions, but it is no longer in force. To illustrate the present situation, assume that an individual receives \$5,000.00 from each of three firms during 1938. Each firm will report \$3,000.00 for both Old Age Benefit and New York State Unemployment contributions. Each firm will deduct 1% from the employee for Old Age Benefit contributions, a total of \$90.00. Each firm will report \$5,000.00 for federal unemployment contributions. Payment of unemployment contributions in this example presupposes, of course, that the employer employs the requisite number of persons so as

to subject himself to the state or federal law, as the case may be.

Q. Our firm has recently moved, incurring expenses for moving, alterations at the new premises, new machinery etc. How should these expenditures be treated on our books and how may they be treated for tax purposes?

A. Moving expenses should be charged to an account so entitled. These expenses are fully deductible for tax purposes, in the year they are incurred. Alterations, partitions, etc., at the new premises should be capitalized, and written off over the life of the lease. The amount so written off may be deducted each year as an expense. The cost of new machinery should be charged to the Plant account. Depreciation, prorated over the estimated life of the machinery, is deductible each year as an expense.

If You are Moving, Here's a Good Idea

A new idea in an announcement of change of location was used by Northern Lithographing Company, who moved as of March 5 to 1250 West Van Buren Street, Chicago. The lower part of the announcement sheet was devoted to two perforated memos, for easy detachment, one addressed "To Accounting Department" and one "To Switchboard Operator." Each memo contained in large type the name of the company, the new address, and the new 'phone number.

Woman in Politics—with Vengeance!

Action is very important. Down in Ohio, there is a sheriff who has been re-elected every year for eighteen years—and yet, has never made an election speech. He just takes his wife out into City Hall Park and shoots cigarettes out of her mouth at fifty feet. No oratory—but he *always* gets elected. If there is any substitute for a sales talk, it is sales action—demonstration—motion. It not only keeps the prospect awake, but adds conviction to your story. The wooden indian is dead. Salesmen who don't keep moving will be buried alongside of him.

—Zenn Kaufman, before Sales Department of the Bates Fabric Company.

Septenary Ad Copy Chart

In selling offset advertising it is well to keep foremost in mind that the prospect is interested in what it will do. It is the after effect of advertising that counts and well arranged visuals and good copy will help.

An experienced advertising man once said before the New York Advertising Club the following regarding the writing of copy: "The only rule that I recommend for writing of strong copy is to read all the rules laid down by successful writers of advertising and then forget them, don't let them bind you, hamper or restrict you, be different, never lose sight of the fact that the job is to put essential information in the minds of the greatest number of people."

It is always safe to assume that nobody wants to read an advertisement but the real job is to make them or induce them to read it. It is best to make the appeal wide enough and common enough to get the interest of most of

the people. The more an advertisement deals with emotions and keeps away from the intellectual, the greater chance it has to reach the largest number of people. Keep the wording simple and understandable.

In the following we give you what is termed the Septenary Ad Copy Chart. This short cut was prepared by A. E. Hurst for advertising instruction work. It is divided into 7 important subjects in advertising, each subject is divided into 4 divisions with 4 captions given under each sub-division, and 50 single word selling suggestions listed for each of the 7 subjects.

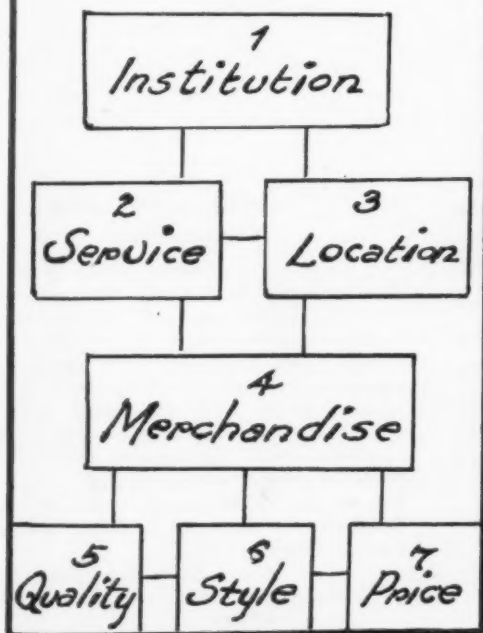
Lithographers and salesmen should preserve this list for reference and add to both captions and the single word selling suggestions.

The sketch at the lower left hand side of this page shows these seven important interlocking subjects and their relation to each other.

A TIP



Here are seven important interlocking subjects for resultful copywriting.



Institution



No. 1 Institution

- A. Strength, Character and Personnel
- B. Reputation, Prestige and Policies
- C. Statements Favoring the Institution
- D. Display and Exposition Angles

A. Strength, Character and Personnel

Real merchandisers instead of mere storekeepers. These statistics show the strength of our institution. Pioneers in knowing the needs of Oregon people. Value through careful and conscientious management.

B. Reputation, Prestige and Policies

Reliability is our chief asset. Patronize this home town institution. That's why we draw patronage from all directions. Specialists who concentrate on best values.

C. Statements Favoring the Institution

Careful buyers trade at this store. The kind of a store a man likes. Never sacrifice quality for a low price. We've bought the entire factory output.

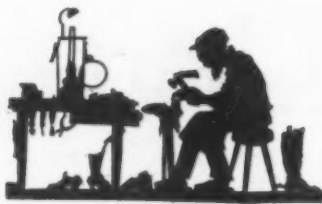
D. Display and Exposition Angles

Our specialty is specialization. It's a business with us—not a side line. The Orient brought to Portland. Visit our special Egyptian Room.

FIFTY SINGLE-WORD SELLING SUGGESTIONS ON INSTITUTION

Useful, ideal, systematic, exclusive, distinctive, modish, select, reasonable, sensible, meritorious, colossal, complete, departmentized, expansive, friendly, hospitable, optimistic, welcome, trustworthy, conservative, celebrated, im-

portant, notable, recognized, reputable, dependable, established, substantial, safe, responsible, wholesome, resourceful, powerful, busy, advancing, leading, liberal, business-like, money-saving, style-center, gift-mart, up-to-date, always-reliable, bargain-building, easy-credit, home-like, long-established, recognized-leadership, profit-sharing, self-service.



Service

No. 2 Service

- A. Courteous and Conscientious
- B. Convenience and Special
- C. Statements Favoring Service
- D. Display and Exposition Angles

A. Courteous and Conscientious

It's a smiling, good will service.
We welcome both purchasers and "lookers."
No trouble to take goods out of the window.
Conscientious service to children.

B. Convenience and Special

Specialized service to stout women.
Cash if you have it—Credit if you want it.
May be bought on small monthly installments.
Immediate possession through credit.

C. Statements Favoring Service

Service reduced to a science.
Service when you need it most.
Service that assists—not insists.
Credit is another name for cooperation.

D. Display and Exposition Angles

A quick selection display of merchandise.
Extreme care in packing and delivering.
Purchases boxed or wrapped for mailing.
A free, personal shopping service.



Location

No. 3 Location

- A. Convenience, Accessibility, Exclusiveness
- B. Specific Advantages
- C. Statements Favoring Location
- D. Display and Exposition Angles

A. Convenience, Accessibility, Exclusiveness

There is a natural charm in our location.
A restful atmosphere conducive to leisurely shopping.
Walk upstairs and save ten dollars.
Our store is thoroughly air conditioned.

B. Specific Advantages

All transportation lines lead to our store.
We are here because we serve.
Shop free from smoke, dust and dirt.
Quiet and dignified rest rooms.

C. Statements Favoring Location

Ample automobile parking facilities.
The store that made Broadway famous.
Patronize your neighborhood store.
Just beyond the "high rent" line.

D. Display and Exposition Angles

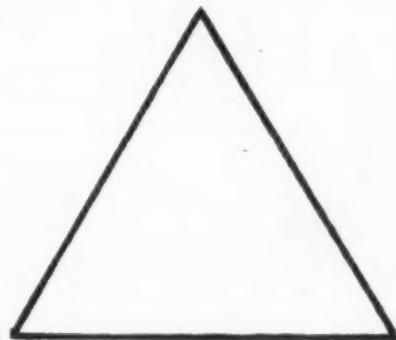
In the heart of the shopping center.
Unusual values in our bargain basement.
Our Gift Shop is located on the third floor.
Our balcony is a delightful place to shop.



FIFTY SINGLE-WORD SELLING SUGGESTIONS ON SERVICE

Unfailing, uniform, able, adept, competent, practical, expert, proficient, masterful, trained, watchful, skilled, attentive, courteous, obliging, respectful, experienced, smiling, genuine, real, enthusiastic, expeditious, fast, prompt, unstinted, approved, commendable, worthwhile, satisfactory, important, superior, painstaking, superb, individual, business-like, good-will, all-night, daily-delivery, day-and-night, P. D. Q.-delivery, new-method, immediate-delivery, without-red tape, rapid-action.

Service



Location

Merchandise



FIFTY SINGLE-WORD SELLING SUGGESTIONS ON LOCATION

Desirous, cheerful, commendable, delightful, pleasing, approachable, central, community, convenient, corner, advantageous, favorable, advertised, established, famous, permanent, prominent, traditional, suitable, distinctive, inviting, splendid, inexpensive, modern, temporary, easily-reached, well-known, style-center, low price, low-rent, money-saving, accessible-to-all, around-the-corner, beyond-high-rent, busy-street, center-of-city, convenient-corner, daylight-all-day, easy-to-reach, fashion-center, on-the-square, one-flight-up, quality-corner, same-old-stand, shady-side, trading-center, easy-access, known-to-all, low-expense, near-the-terminal.



No. 4 Merchandise

Merchandise

A. Completeness and Variety

- A. Completeness and Variety
- B. Merit of the Merchandise
- C. Statements favoring the Merchandise
- D. Display and Exposition Angles

Complete range of prices and sizes.
Varied stocks eliminate the necessity of shopping elsewhere.
A wide variety through extensive market connections.
Exactly what is wanted always.

B. Merit of the Merchandise

The stock includes no second or imperfects.
Packed in clean containers, free from dust.
Conforms with all the pure food law requirements.
Good taste in pattern and design.

C. Statements Favoring the Merchandise

Made especially to order for this city.
Endorsed by the "Good Housekeeping Bureau."
An Oregon product of quality.
Ideal for travelers, tourists, picnickers, etc.

D. Display and Exposition Angles

Merchandise gathered from all parts of the world.
Stocks systematically arranged for quick selection.
The first time displayed in this city.
Complete instructions for use and repair.



No. 5 Quality

Quality

A. Dependable, Durable and Serviceable

- A. Dependable, Durable and Serviceable
- B. Exclusiveness, Reliability and Attractiveness
- C. Statements Favoring the Quality
- D. Display and Exposition Angles

Critical examination invited.
Best materials and painstaking care.
Quality through hand workmanship.
Value and economy through quality.

B. Exclusiveness, Reliability & Attractiveness

Distinction derived from expert production.
An expression of your own personality.
Newness, freshness, and richness.
Carried by us exclusively.

C. Statements Favoring the Quality

No extra charge for quality.
Long-established reputation for quality.
Quality rather than quantity.
Quality combined with value and service.

D. Display and Exposition Angles

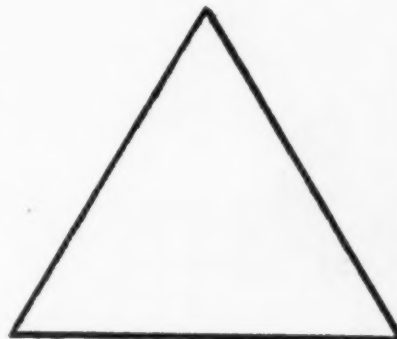
Quality is this store's first consideration.
Made on honor, sold on merit.
Goods from the best mills in America.
Skillful buyers selected this merchandise.



FIFTY SINGLE-WORD SELLING SUGGESTIONS ON MERCHANDISE

Artistic, advertised, beautiful, chic, correct, dainty, desirable, exclusive, fashionable, gorgeous, imported, modish, matchless, Oriental, serviceable, snappy, superior, super-fine, waterproof, appetizing, domestic, exquisite, juicy, luscious, nutritious, pungent, ripe, roasted, selected, uniform, wholesome, comfortable, appropriate, honest, substantial, conservative, delicious, supreme, zestful, genuine, ultra-smart, up-to-date, fresh-cut, well-made, union-made, first-class, newly-arrived, bona-fide, well-chosen, home-made.

Quality



Style

Price



FIFTY SINGLE-WORD SELLING SUGGESTIONS ON QUALITY

Sterling, pure, authentic, accurate, genuine, honest, trustworthy, true, guaranteed, tested, inspected, elegant, exquisite, approved, striking, rich, meritorious, record, modern, reputable, serviceable, washable, supreme, faultless, superior, distinct, significant, pronounced, marvelous, priceless, lovely, lavish, certified, best-by-test, built-on-honor, all-wool, blue-ribbon, crystal-clear, easy-to-tub, fresh-every-day, hand-made, hundred-per-cent, just-right, very-best, sure-to-please, master-built, good-wear, first-class, first-prize, double-service.



Style

- No. 6 Style**
- A. Attractiveness of Style
 - Styles that typify the spirit of the season.
 - Style through clever craftsmanship.
 - Attractiveness and style through quality materials.
 - An investment in good appearance.
 - B. Exclusiveness of Style
 - Our buyers constantly study style trends.
 - Style plus, through expert and experienced workmanship.
 - Individuality through exclusive styles.
 - To be well-dressed, one must be correctly dressed.
 - C. Statements Favoring Style
 - In addition to style, fitting is most important.
 - Styles that fit the purse and personality.
 - Style combined with quality and service.
 - We religiously follow the new fashion trends.
 - D. Display and Exposition Angles
 - If it's new, it's here—if it's here, it's new.
 - A leadership in presenting the newest styles.
 - Visit our Fall Opening of Style Merchandise.
 - Spring Opening "Fashion's Mirror" presentation.



Price

- No. 7 Price**
- A. Specific Bargains and Values
 - Guaranteed to save money.
 - Bargains of value through quality.
 - Every day is bargain day.
 - Never knowingly undersold.
 - B. Lowness of Price
 - Unlimited purchasing power.
 - Concessions for manufacturers.
 - Regular prices as low as special prices elsewhere.
 - Low prices to stimulate early buying.
 - C. Statements Favoring the Price
 - Prices in conformity with quality.
 - The best goods are the cheapest.
 - Pay cash and pay less.
 - Cash and carry prices.
 - D. Display and Exposition Angles
 - Prices subject to change without notice.
 - Prices marked in plain figures.
 - Exposition of economy.
 - Final farewell to remnants.

FIFTY SINGLE-WORD SELLING SUGGESTIONS ON STYLE

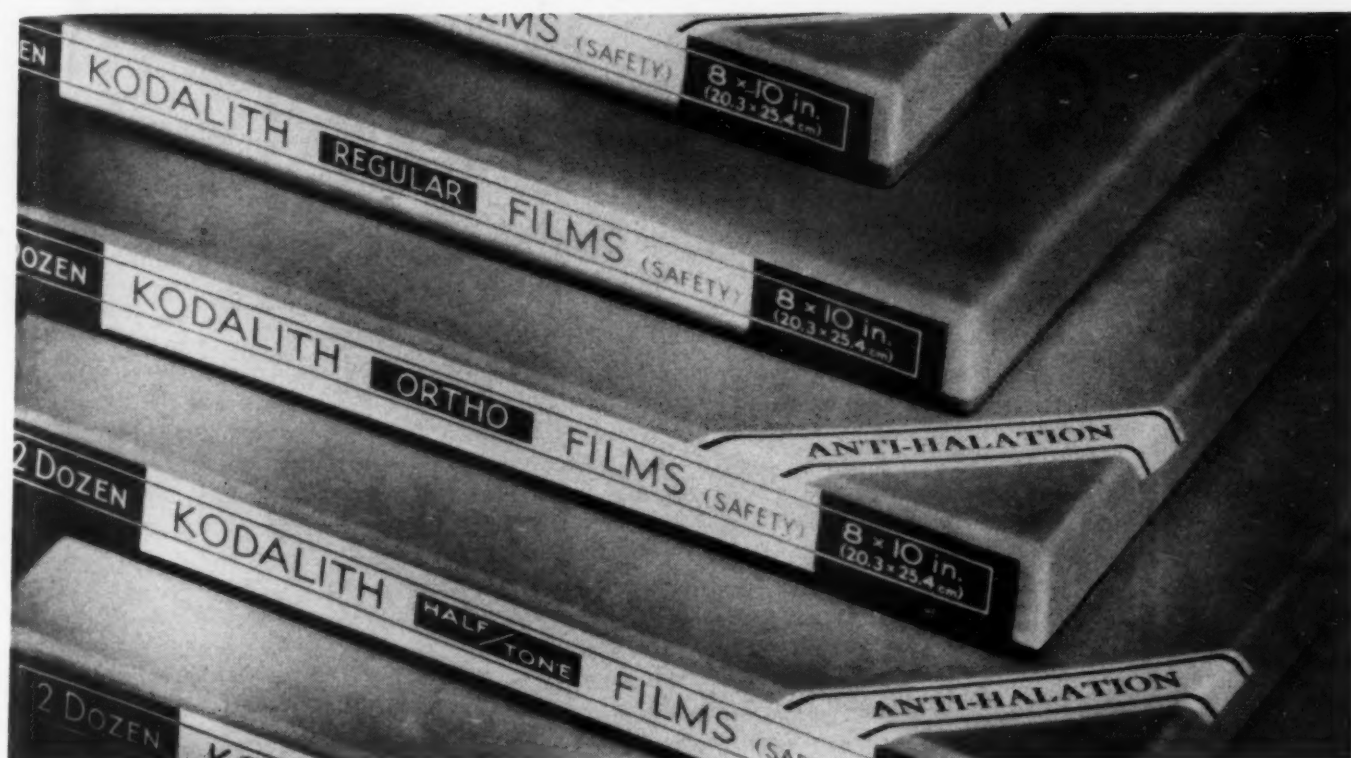
Admirable, cheerful, commended, genuine, desirable, favored, refreshing, popular, refined, preferred, welcome, authentic, becoming, dependable, dressy, harmonious, chic, proper, sophisticated, sponsored, trustworthy, alluring, bewitching, catchy, charming, fascinating, irresistible, magnetic, advance, modern, exquisite, gorgeous, swagger, fastidious, colorful, novelty, smart, flawless, fashionable, made-to-measure, tailor-made, hand-made, distinctly-Parisian, hit-of-the-season, Paris-copied, ready-to-wear, ultra-smart, trend-of-fashion, up-to-date, slender-line, latest-fashion-note.



FIFTY SINGLE-WORD SELLING SUGGESTIONS ON PRICE

Moderate, shrunk, uncommon, unusual, reliable, trust worthy, admirable, advantageous, becoming, desirable, enjoyable, favorable, good, indorsed, recommended, refreshing, popular, seasonable, advertised, celebrated, wholesome, snappy, attractive, bewitching, captivating, economical, inexpensive, striking, ideal, incomparable, matchless, original, perfect, unequalled, unexcelled, introductory, every-day, buy-now, final-mark-down, grab-me, quick, small-profit, seldom-seen, less-than-cost, wind-up, two-for-one, money-saving, early-morning, get-busy, last-call, close-out.

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SPEED up jobs, and improve results, with Kodalith Films. Fit your film to the work in hand. With the three non-stripping Kodalith Films available, you can take all types of copy in stride... quickly, economically, and surely.

KODALITH REGULAR FILM A modern material of unsurpassed uniformity, for average black-and-white work—jobs that demand economical, fast, efficient production.

KODALITH ORTHOCHROMATIC FILM Especially adapted to very

fine line work, colored or stained copy—the so-called difficult jobs—and to the making of contact screen positives.

KODALITH HALFTONE FILM For copy that calls for highest-grade halftone qualities. A long-scale emulsion, outstandingly adapted to dot etching.

All three are coated on a thin base of the “safety” type—dry quickly, and hold size closely. All are supplied in cut sheets and standard-size rolls.

EASTMAN KODAK CO. Graphic Arts Dept.
Rochester, N. Y.

IN lithography, and particularly offset lithography, we hear much of so called gear streaks, and at one time actual gear streaks were quite common. They still exist to some extent but the term is too loosely used to designate all axial streaks and very few of them are caused directly by gears.

Practically all streaks across the cylinder are caused by a periodic and momentary rub of the blanket upon the plate or the paper. The outstanding exceptions to this are roller streaks and that single streak that so often occurs from nine to twelve inches back from the leading bend of the plate. This streak will be taken up later.

Rubbing of the blanket upon a lithographic plate, if it be momentary and periodic, will soon show up as streaks upon the paper in the printed areas, and will in time destroy the water receptive coating of the plate and the formation of the grain in the nonprinting areas, making the plate receptive to ink at these points, resulting in scum and a ruined plate.

Streaks through printed solids are caused by the same condition and the formation of the streak is probably due to the squeegee action of the blanket upon the inked surface of the plate.

The solution, naturally, is to eliminate blanket rub and the first step in eliminating this destructive action is to find its source. "Rub" of course is that action that occurs between two surfaces in contact that are travelling at different speeds and in the case of streaks we are forced to assume that the cylinder surface speeds are different between the two cylinders for a small fraction of the revolution and approximately coincide between the rub periods. We say approximately because it is known that a slight rub does not always cause a streak, and whether or not the surface speeds exactly coincide between streaks, we do know that the rub is less severe, and that the damage if any is not readily noticeable. In fact, it may be said that tendency to rub and streak is inherent in the offset press and the reason that we do not always have them is because the quality of the

Streaks

By C. W. LATHAM

grain and the toughness of the plate coating is not always broken down by this rub if the resulting friction is of a mild character.

This brings us back to our favorite subject, pressure, and it should be plain that the lighter the pressure under a rubbing condition the less the friction and the better the chance the water, ink, coating and the grain has of standing up under it. In fact, the lighter the pressure the less liable we are to have rubbing in the first place, as we shall explain later.

Now let us attack our problem of finding the probable cause or causes of this momentary rub, and why surface speeds should coincide one instant and differ the next. One cause was explained in a previous article, that of interrupted rotation resulting from the imperfection of spur gears, and when this is the case, the streaks may truly be called gear streaks.

The first major effort to control this type of streaks was the introduction of bearers. Perhaps some of our younger readers do not know that the early offset press did not have bearers, and when improperly packed the gear streaks on these presses were something to cope with, but with a thorough understanding of the principles of packing and pressure a press without bearers may be made to perform remarkably well.

The bearer was put on with its surface at the pitch line of the gears in order to insure an uninterrupted rotary motion between the cylinders and a gear segment was added to the driven gear and a flat to the bearers at the gap of the cylinder to position the two cylinders at a point that would keep the gear teeth from touching during the rest of the revolution when the pressure was on. When the bearers are in good condition and have sufficient contact

pressure, they will accomplish one purpose for which they were intended, that of preventing the streaks that are caused by cylinder gears.

However, all gear streaks are not caused by the cylinder gears, for the gears that drive the dampening and inking rollers, when deriving their power from a cylinder gear, have been known to cause streaks, and this is probably one of the contributing reasons for the change in design of those presses that now use silent chains to drive rollers from a power source more remote from these touchy cylinders.

There is another form of gear streak which is not so much the fault of the gears as it is the carelessness of the pressman. Between the tip of a gear tooth on one gear and the base of the cut on the other gear is a space termed the clearance, and if this clearance is allowed to get filled up with dried ink or paper fuzz to a point where it forms a hard mass for the tooth to strike, the resultant jar and vibrations set up can easily result in a slight streak as well as other disastrous consequences. Sometimes paper or other material may adhere to the side of a tooth to such a thickness that the meshing tooth will be forced into contact with the opposite face and this is not a good condition for, as explained before, our goal is to keep the teeth from touching insofar as it is possible to do so. So it is good practice to keep gears clean and well greased with a heavy clinging type of lubricant.

There is a type of roller streak that can be attributed to rollers whose surface has become glazed. Form rollers that have been neglected will develop a hard glassy surface, and when used with a soft ink, plus low set sockets, there is not enough friction maintained at the point of contact between the form and the drum. The roller will slow down at the cylinder gap so that when the plate again contacts it, the surface speeds will be different, causing a skid or wiping action until the roller again attains its normal revolutions. This will cause blur and streaks. The cure is to maintain a plyable and velvety surface upon form rollers at all times and to keep roller sockets so adjusted



Once you install a DeVilbiss Spray Outfit, your investment is always good. You can make future changes—without fuss, without loss. You can quickly, easily move your outfit to any kind of press. You can expand your spray system as much as you wish, merely by adding stock parts. You never need scrap a DeVilbiss Outfit.

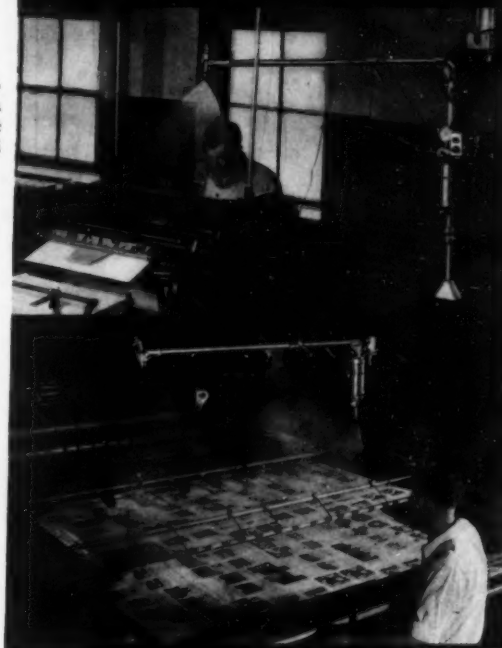
DeVilbiss equipment is sturdy and efficient—it is built by a company with fifty years of highly specialized experience. When you buy spraying equipment, buy DeVilbiss. It's money safe—money saved! Write for full information.

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A DeVilbiss Portable One-Gun Spray Outfit at work on a vertical job press

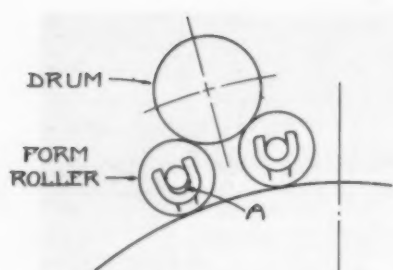
DeVilbiss Two-Gun Spray Outfit on a two-color flat-bed press



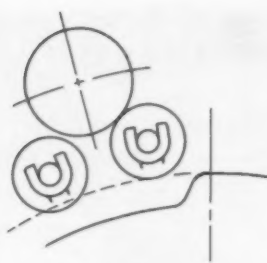
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NO SLIP-SHEETING
NO INK DOCTORING
NO RACKING
NO RUNNING TIME LOST

DEVILBISS SPRAY SYSTEMS

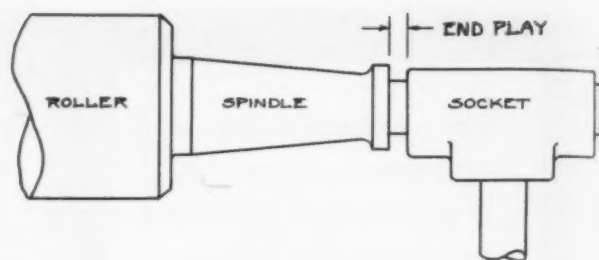
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Sketch showing excess socket clearance at "A". This form roller has no greater contact with the plate than the one next to it which has only a few thousandths clearance.



Sketch showing how a low socket allows the form roller "B" to drop out of contact with drum at the cylinder gap, while the one next to it remains in contact and continues to revolve at normal speed.



Sketch showing clearance between spindle collar and socket.

that the forms will not drop out of contact with the drums at the cylinder gap.

Poor adjustment of the roller sockets also has a bearing upon that streak that often occurs one roller revolution back from the leading bend of the plate. Sockets set too low will allow the form rollers to drop below the surface of the plate when the cylinder gap comes round, so that when the bent edge of the plate strikes the roller, it squeezes a streak across it and this streak will be duplicated upon the plate at the end of the first revolution of the roller.

There seems to be a tendency among pressmen to believe that the lower the socket is adjusted, the more pressure the roller will have upon the plate. This is not exactly true for the reason that once there is even a few thousandths clearance between the roller spindle and the bottom of the socket, the roller has just as much contact pressure against the plate as it would have were this clearance increased to a quarter of an inch. Any bottom socket clearance in excess of just enough to take care of inaccuracies of the roller is very harmful and causes roller jump and a streak.

Form roller end play seldom causes visible streaks but does have a grinding action upon the plate and should be eliminated by the use of collars or spacers in order to prevent the gradual breaking down of the plate coating and grain.

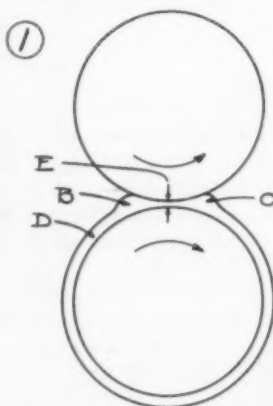
Another type of streak may sometimes be traced to the discrepancy between the surface speed of the ink storage drums and the surface speed of the plate. If a particular press is designed so that the surface speed of

this drum coincides exactly with the bearer and the plate is packed above or below the bearer, then slippage must occur between drum and form rollers or between form rollers and plate and if it occurs in the latter case it is possible to get roller streaks. However the pressman can help himself to this extent. If the plate is packed above the bearers, we want more form roller surface speed at the plate than we do between the drum and the forms and more pressure gives more surface speed to the soft roller at point of contact, therefore try to get lighter roller contact between form and drum than between form and plate. Set form rollers just the reverse when the plate has to be packed to a point below the bearers.

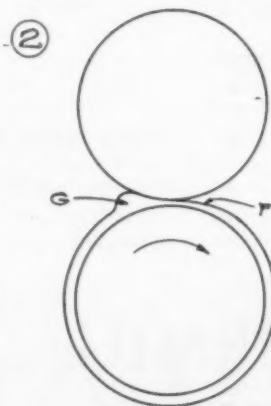
And while we are on the subject of roller setting, it might be well to mention that a periodic checking of drum alignment is important. If one end of the drum is closer to the cylinder than the other, the forms cannot be set axially parallel with the plate cylinder and will develop a grinding action upon the plate.

There is another streak that is often found in new presses if they be of the plain bearing type, and is also found in presses that have been moved from one location to another and in presses from which cylinders have been removed and reinstalled. It is a tight or bound bearing streak and is caused by the chattering that is set up by the bearing pressure being so great that the lubricant is squeezed out and the dry surfaces trying to cling together and actually succeeding in clinging for an instant and then letting go when the torque of the journal overcomes the seizure and allows the slightly twisted journal to spring back into position. These seizures and releases may occur so close together that they will cause streaks that might easily be mistaken for gear streaks. A good thing to look for when streaks suddenly appear in the middle of a run, is a hot bearing.

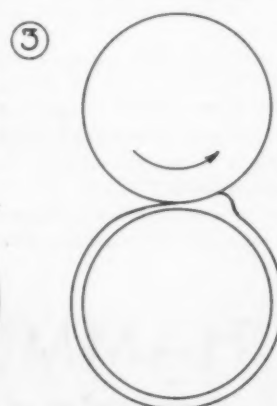
The more common type of streak is the one caused by improper packing and excess pressure. The packing must be so calculated as to give true



Drawing shows plate, blanket and bearer surface speeds perfectly synchronized.



This shows blanket travelling too fast and trying to drive the plate faster than the bearers will allow it to go.



This is the opposite condition to No. 2 and is an uncommon occurrence.

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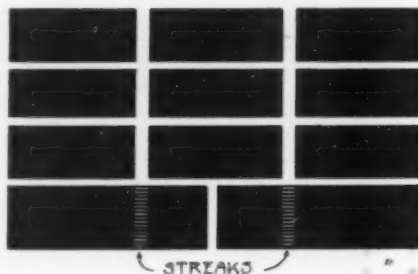
(Please attach to your business letterhead)

rolling contact between cylinders in order to prevent streaks for when the plate cylinder is pressed into the blanket covered cylinder under printing pressure, the blanket is depressed along the line of contact and the rubber, squeezed out of this space, bulges at each side as shown on drawing (1) leaving an excess bulge of rubber at B & C. Now the ideal condition is to keep the volume of these bulges the same during the entire revolution of the cylinders. To do this, it should be plain that as the cylinders revolve a positive amount of rubber must travel through the restricted space marked E and because this space is measurably less than the thickness of the blanket D it has to travel faster at this point than it does during the rest of the revolution. It therefore follows that the surface speed of the plate should be synchronized with the speed of the blanket *thru the restricted space* rather than with the speed of the undepressed surface. It is also a fact that the smaller the restricted space or the greater the squeeze pressure, the greater the blanket speed at point of contact.

When the surface speeds are not synchronized and the blanket is packed too high, a condition will result as depicted in drawing (2) which shows tension at point F and pressure at point G and when the combined force of these two points becomes great enough to overcome the friction between the blanket and plate, a slippage will occur, generally causing a streak. The period between these slippages will depend upon pressure, friction and tightness of blanket and streaks will occur generally from a quarter of an inch to three quarters of an inch apart. When the plate cylinder is packed too high a condition like drawing (3) will occur but this is very rare.

Due to conditions beyond their control, pressmen cannot always pack their cylinders in perfect surface synchronization, so the next best thing to do is to pack as nearly perfect as possible and then print with as light a pressure as possible for we have just proven that the lighter the pressure, the lower the relative speed of the blanket through point of contact

GRIPPER EDGE



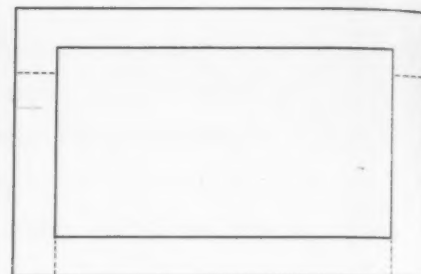
A type of form that should be avoided. Less damage would occur if the two large designs were put at the gripper edge.

and the less the tendency of periodic escapement of the bulge. It is also true that the more perfect the surface of the cylinders, the lighter the squeeze pressure may be.

We now come to radial streaks, or streaks around the cylinder and these are the result of a combination of faults as well as the way the work is laid out upon the plate. Glazed rollers, lack of oscillation, too flat a grain upon the plate, poorly covered or improperly set dampeners and too soupy an ink all contribute to radial streaks. The greatest offender is too much surface moisture and surface moisture is the unavoidable result of excess cylinder pressure and a flattened grain. With our present design of inking system it is impossible to get the same deposit of ink all over the plate. If there were no gap in the plate cylinder and the design were solid over the entire surface and we were printing to a web instead of sheets, it would be possible to get a good distribution of ink over all the paper, but where there is a cylinder gap and wherever there is no design on the plate to receive ink, an excess of ink will build up on the form rollers in spite of all the storage rollers and vibrators now in use.

To demonstrate this fault, assume that we have a wide border completely surrounding a design like a picture frame in a solid color. It is practically impossible to make the vertical sides of this frame print with the same deposit of ink as the ends of the horizontal bands adjacent to it for the reason that the small section of roller feeding the vertical sides becomes starved of ink after the first

GRIPPER EDGE



Streaks will occur at dotted lines unless water and ink are under perfect control, and rollers in good condition.

revolution following the gap, while the roller section right next to it has a surplus which it deposits upon the relatively small area of the adjacent horizontal band. Only when rollers, grain, ink and water are satisfactory, can we hold this condition to a minimum and further improvement may be gained by attaching independent storage vibrators.

Dirty or greasy dampeners, water roller, ductor or vibrator will cause radial streaks due to too little water in one section and excess water in another.

In summing up the subjects of streaks we repeat that gear streaks may be avoided by accurate press adjustment, roller streaks may be eliminated by correct setting and keeping the rollers in proper condition, radial streaks may be kept to a minimum with proper care and even that greatest of all offenders, blanket rub, need not bother us if we have true cylinders, proper diameters and light pressure.

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To interest the younger generation in the need for a strong American Merchant Marine, The Propeller Club of the United States, 17 Battery Place, New York, is offering prizes of ten ocean trips on American ships to the winners in a nation-wide poster contest.

Entry in the contest requires no obligations on the part of contestants and no entry fees. Entry blanks may be obtained by writing to The Propeller Club.

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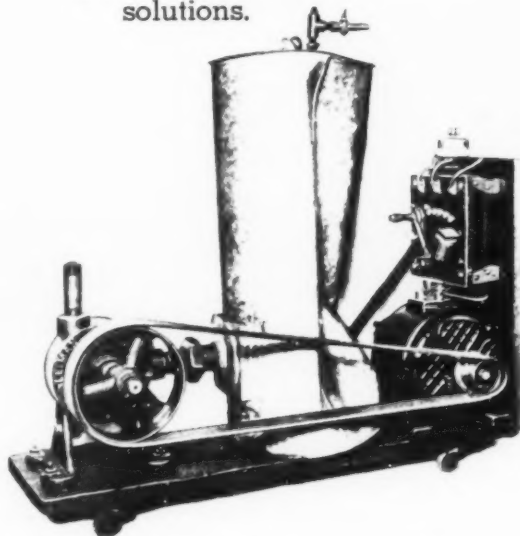
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Enclosed stud in piston holds wing close to cylinder at top, preventing loss of air pressure or vacuum.

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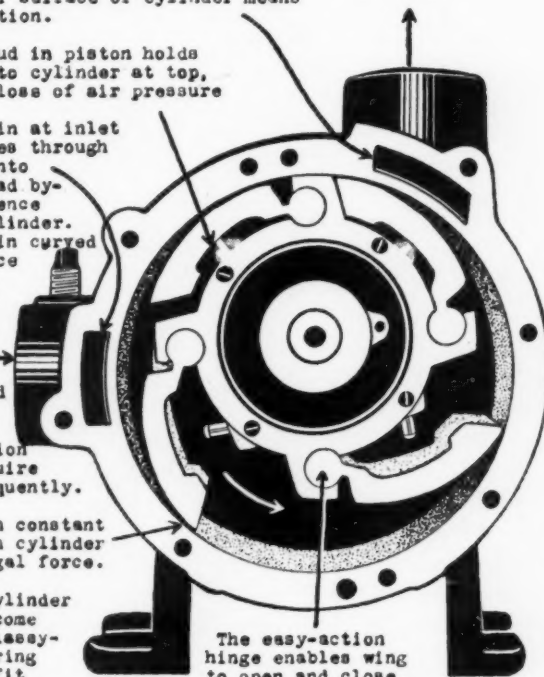
INLET threaded for standard iron pipe.

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Flashing

By THEODORE S. HILLER

FLASHING, that so called auxiliary exposure of the sensitive medium to the reflected light from a sheet of white paper covering the original and most of the copy board, is made to increase the opacity of each dot at its core. Although such an operation affects every dot on the negative, their size and shape is unaffected. Especially is this true of the shadow dots which would result in very weak small dots unless the additional exposure is provided to construct a more intensified latent dot which develops into a firm opaque dot.

Although the operation of flashing was known as a "build up step" to the wet collodion plate photographer in the days of low powered arc lamps, today it is resorted to because of the short span of sensitivity in the average contrast negative for reproducing the shadow detail. This condition necessitates the additional exposure of the dots in the shadow areas of the negative as shown in Figure 1.

The dots of a normal negative which will reproduce an original in its widest ranges should be produced proportionately both in size and definition or shape. Each dot should represent in a commensurate measure a portion of the corresponding area of the original and any variance which might be the result of faulty flashing would detract to an equal extent from a true reproduction.

Tests have proved that the majority of the originals submitted for photo-offset reproduction require flashing in order that the scant ghost-like dots produced during the main exposure are not burned out during the plate making operation. Without the additional light intensification, the dots in the more transparent areas of the negatives



Illus. 1. Composite half-tone showing the results of three primary exposures and also the flash

Illustrates the actual results obtained by each exposure, i.e., highlight, middletone, shadow and flash, and the result normally gotten when these exposures are combined. Although the original was an excellent photographic print of even gradation, the three step method was used to convert all of the detail into the half-tone negative.

(shadows) would be extremely weak and the tone would reproduce as a solid which would unbalance the complete tonal range of the negative.

Normally the flash exposure is accomplished with the aid of a small aperture, preferably a F/64 or a F/90. This aperture is chosen with regard for the following items:

- 1) the general actinic light strength
- 2) the reflective quality of the flash sheet.
- 3) method of determining the screen position.

Fundamentally when there is an even diffusion of light from the entire white sheet, the sensitive medium records the shape of the diaphragm aperture. Since the size and shape of the diaphragm aperture bears such a responsibility and since the core size should be minute and generally its shape should be round, a small round aperture should be chosen.

Just as the formation of all the dot sizes depends upon the ratio which the diaphragm aperture bears to the screen distance, similarly the flash

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Illus. 2. Normal half-tone. 133-line screen

aperture bears a corresponding relationship to the screen distance. Were the screen distance set at its proper focal point and an improper aperture chosen, that is, $F/45$ or $F/32$, the resulting shadow dots would be large and fuzzy. The flash exposure therefore would rob the normal definition of the dots formed in the shadows during the main exposure. Although the shadow dot size in a photo-offset negative is normally larger than the same dots on negatives which are used for other photo-mechanical reproductions, the slightest sacrifice of detail would prove objectionable.

An extremely small aperture on the other hand would increase the flash exposure beyond all reasonable justification and result in a smaller core than is useful for normal reproduction by photo-offset methods.

Normal flashing procedure includes the following operations:

1. Draw the flash sheet over the original. This sheet may be any specimen of a (blue white) calendared paper, large enough to cover the copyboard.

2. Choose the proper stop—its

size should be in proportion to the normal screen distance. Screen distance remains the same throughout the total main exposure and the flash exposure.

3. Expose by removing the lens cap. Exposure time is dependent upon
 - a) Size of stop;
 - b) Screen distance;
 - c) Type of flash sheet—its reflective ability;
 - d) actinic light strength, and
 - e) Type of sensitive medium employed.

Although some writers contend that the flash exposure bears a definite relationship to the main exposure, this is only partially true because of the wide variation in originals. Nevertheless, several factors which determine the main exposure also determine the flash exposure and probably serve as reason enough for such a contention.

Undoubtedly the most uniform and the most accurate method of flashing can be accomplished with the aid of a Pitman Half-tone Flashing Lamp.

The accompanying illustration indicates the method of attaching the lamp to the camera and the ease with which it can be used. Several points



Illus. 3. Normal exposure. No flash exposure

should be mentioned in its favor, namely:

- 1) Constant light strength.
 - a) absence of variation in the entire flash sheet.
 - b) absence of any extraneous reflecting bodies.
- 2) Uniformity of coverage of the screen and negative.
- 3) Increased light strength decreases flash exposure.

Emphasis must be placed at this stage of the discussion on the exposure duration of half-tone negatives, regardless of the exposure system employed. The total exposure must be sufficient to produce the required density, a standard degree of contrast and virtually all of the detail of the original, without unnecessary forcing of development.

Over-exposure and under-exposure, however, are extremely disadvantageous since both types of negatives require remedial operations to bring them within the standards necessary for perfect plate making. Normally half-tone negatives are made without the necessity of any additional remedial operations.

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Illus. 4. Normal exposure. F/22 flash stop



Illus. 5. Normal exposure. Under-exposed flash. F/90 flash

Over-exposures result in closed up highlight transparent dots and false middletones. Unquestionably the tendency is to develop the negative for a shorter time than normally and thus sacrifice correct dot formation in the shadows and also loss of detail because of the shape of the dots. Although continued developing for a normal period results in an extremely dense negative, such a negative will provide stronger dots throughout its surface and thus withstand the dissolving action of the subtractive reducer (farmer's reducer).

An under-exposed negative usually results in a slightly fogged negative (caused by forced development) whose dots are smaller and insufficiently opaque. Intensification can be relied upon to increase the opacity of the ghost-like dots but the size of the dots remain practically unchanged with very little detail evident in the shadows.

Development and Fixation

The finishing operations of half-tone negative must be carried on with utmost care and attention to the following rules.

- 1) Compound a strong contrast (caustic) developer which is capable of producing intense opacity in the dots and clear transparencies. Use the developer advised by the manufacturers of the sensitive medium.

- 2) Use a freshly compounded developing solution; preferably before it is two days old.

- 3) Dilute the stock solution properly as advised on the formula sheet.

- 4) Prepare the solution with the correct temperature in mind—namely 65°–70° Fahrenheit.

- 5) Immerse the negative evenly in the developing solution. Rock the tray while developing action is being carried on.

- 6) Determine the speed with which the image appears and calculate the proper developing time which depends upon the following circumstances:

- a) variations in sensitive media.
- b) strength of the developer.
- c) temperature of the developer.

- 7) Examine the appearance of the image on the back of the negative.

- 8) Examine the dot formation, size from the emulsion side of the negative with the safelight as a back-

ground. The opacity of the dots and the appearance of the edges of the dots will determine much that the operator wishes to know about the length of the developing time.

Although the above method of developing is purely empirical, the foundation for this method lies in the fact that after some experience with a given sensitive medium, the camera operator has a definite means of determining the depth to which the developing agent has penetrated the emulsion and has caused chemical changes of the exposed silver salt into metallic silver.

Undoubtedly many will contend that the most efficient and uniform method of developing half-tone negatives is the thermal method. Since this method does require a standardization of the following factors:

- 1) exposure
- 2) dilution of the developer
- 3) temperature of the developer, much can be said in its favor.

Nevertheless, the conditions or rules which are adopted for one particular batch of sensitive emulsions often requires some alteration because of the variations in the speed

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Illus. 7. One side reduced. Over-exposed half-tone

with which the emulsion was dried; variations in the velocity of the developing action and the variations in the character of the gelatine. The necessary alterations required by

each batch of sensitive emulsion should be confirmed through experimental means under exact production conditions and a permanent record should be kept for ready reference.



Illus. 8. Under-exposed half-tone

The outline on the following pages is devised to aid the operator in analyzing the cause of his failure to produce satisfactory negatives, with suggested remedies for certain difficulties.

If Mr. Hiller has not covered in this article and in table on page 44 information that will help you to correct immediate troubles, he suggests that you send him, care of The Photo-Lithographer, a complete description of your difficulties, together with samples of your half-tones or other negatives. Questions from members of the National Association of Photo-Lithographers will be answered first, and all others as Mr. Hiller's time permits.



Illus. 6. Pitman Flashing Lamp

THE PHOTO-LITHOGRAPHER

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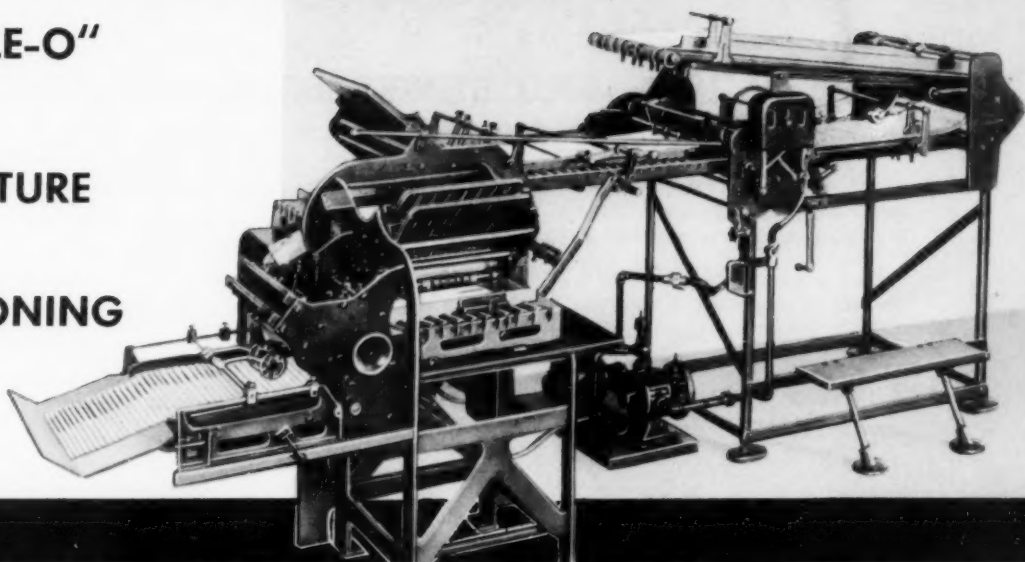
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FAILURES AND REMEDIES IN HALF-TONE PRODUCTION

1. DOTS LACKING IN OPAQUENESS

<i>Cause</i>	<i>Remedy</i>
a) Old or oxidized developer	a) Use fresh developer
b) Weak developer—too much dilution	b) Dilute carefully
c) Temperature of developer too low	c) Use the developer at 65°–70° F. Preferably at 68° F.
d) Underdeveloped	d) Develop the image until the image shows on the back of the negative
e) Developer improperly compounded: 1—too much bromide, 2—too little hydroquinone	e) Compound the developer according to the formula supplied by the film manufacturer

2. CONTRASTY NEGATIVES

a) Over exposure with highlight stop	a) Decrease highlight exposure 1—Make a trial negative of various steps as shown in Figure No. 1
b) Screen distance incorrect	b) Examine the screen distance 1—consider the reduction size and decrease screen distance 2—Refer to table on page 52 of the March 1937 Photo-Lithographer
c) Incorrect highlight stop	c) Use a smaller highlight stop which bears a definite proportion to the screen distance
d) Short shadow exposure	d) Increase the shadow exposure, thereby producing a better dot in the shadows and more in tonal proportion to the highlight dots

3. FLAT NEGATIVE LACKING IN CONTRAST

a) Improperly exposed	a) Each copy and reduction requires a definite exposure to produce a satisfactory negative. Too short an exposure with the highlight stop tends to produce square open transparent and square opaque dots. Too short a middletone exposure causes a loss of detail and lack of proper tonal balance
b) Screen distance too short	b) Examine screen distance. Short screen distance produces open highlights and large shadow dots
c) Long flash exposure (Flashing exposures should be proportionate to the degree of contrast with copy. One bearing black shadows and bright highlights requires longer flash exposure than gray copy)	c) Decrease flash exposures. Use smaller flash stop
d) Small highlight stop	d) A small highlight stop defeats the purpose. Namely: to close up the opaque dots of the highlight areas

4. DOUBLE DOTS OR MOIRE

a) Camera vibrated during exposure	a) Examine the camera for contact with the wall of the darkroom. Avoid moving the camera during the exposure. If stops are used, place the stop all the way into the groove of the lens
b) Stop improperly placed in the groove of the lens	b) Examine the stay-flat for shiny spots, if vacuum type, paint it a dull black. If a tacky stay flat is used the coating should be dark
c) Halation or back reflection	c) Use anti-halation backed sensitive media

5. VARIATION IN DOT FORMATION AND SIZE ON OPPOSITE SIDES OF THE NEGATIVE

<i>Cause</i>	<i>Remedy</i>
Improper alignment of the screen with the stay flat and negative	Have camera adjusted. Alignment is accomplished with the aid of a step-gauge placed between the surface of the screen and the stayflat or ground glass

6. SPOTS

Dirt on the screen or on the sensitive medium	a) Clean the screen with lens cleaning tissue, soft chamois or silk. Breathe upon the screen and wipe it clean b) Snap the film on the back to remove the dirt or use a clean camel's hair brush
---	---

7. WEAK GHOST-LIKE DOTS

a) Underexposed half-tone negative	a) Expose with the proper stop for necessary time. The half-tone screen absorbs approximately two-thirds of the actinic light. Make a set of trial exposures in steps
b) Under-development	b) Develop until the image shows through the back of the negative
c) Improper screen distance	c) Improper screen distance will often cause weak dots in the shadows
d) Eliminating the flash exposure	d) Flash the negative to a good sheet of white paper for proper length of time

8. FUZZY DOTS

a) Incorrect screen distance and exposure	a) Focus the screen properly for the enlargement or reduction. Check the exposure
b) Stay flat improperly applied	b) Examine the position of the stay flat. It should always be parallel to the screen
c) Screen placed on screen bridge of the camera with the thick side toward the sensitive medium	c) Examine the position of the screen. The thin side always faces the sensitive medium. Failure to place the screen in the camera properly will not allow for the proper screen focus

9. BROWN NEGATIVES

a) Old developer	a) Use a fresh developer for each half-tone negative
b) Temperature of the developing solution too high	b) Always use the developing solution at 65° to 70° F. A worn developer closes the highlights transparent dots and causes a brown negative

10. GREEN BROWN NEGATIVES

a) Under exposure	a) Expose sufficiently
b) Forced development	b) Develop for an average time. The speed of development compares with the speed with which the image appears

11. STREAKS AND BLOTCHES

a) Uneven immersion in the developing solution	a) By holding the exposed negative emulsion side down draw it through the developer evenly and turn it over, immersing again
b) Too little developer in the tray	b) Dilute enough developer to cover the entire negative evenly
c) Insufficient agitation during development especially the early stages	c) Rocking the tray during the first few seconds of development is extremely important but should be continued throughout the whole operation

Old Photogravures to be Shown at Exposition

OF foremost interest to lithographers in the First International Photographic Exposition, April 18-24, in Grand Central Palace, New York, will be original photogravures, dating back to the year 1870, to be on display in the Historical Section.

Since one of the most important aims of the Exposition is to offer the camera-minded public a thoroughly comprehensive cross-section of the growth and development of the art of photography during the past century, this Section will be the starting point for many visitors whose interest in camera work is technical as well as artistic.

Due to the close relationship of primitive photography to early methods of lithography, followers of the latter art will find an added interest in the Historical Section which will feature some of the original photogravures of Edward Muybridge, famous dryplate photographer in the two decades before the turn of the twentieth century.

Muybridge was the first to take sequence action pictures such as taken by today's magic eye camera. He did this by hooking up several cameras and setting off their shutters in rapid sequence while the subject moved across the field of the lenses. In the first model of his apparatus, he used a series of strings to set off the shutters, but later devised an electrical synchronizing system.

Equally significant from the historical standpoint will be an exhibit of 100 prints made from the original negatives of Brady and Gardner, famed Civil War photographers, many of which have never been publicly shown. The famous negatives are now in the archives of the United States War Department, and the prints are being secured by special permission of the Exposition agency.

The First International Photographic Exposition will be an all-inclusive show in its enormous scope of exclusive prints taken by outstanding professional photographers and works of amateurs throughout the country.

Hilo Wins Safety Trophy

HILO Varnish Corporation is proudly displaying in its offices at 42 Stewart Avenue, Brooklyn, a beautiful bronze plaque awarded to the management and employees of the Corporation as a Safety Trophy in recognition of their making the best record in their group in the way of accident prevention.

The trophy is an annual award culminating the year's contests sponsored by Associated Industries of New York State, Inc., and participated in by groups representing practically every industry in the State.

Year after year Hilo's efforts to win the coveted award in the New York State Accident Prevention Campaign just missed the mark, and for five consecutive years the certificate for 100% freedom from accidents was their consolation. In 1937 they finished with a perfect score again, and this time were awarded the well-earned trophy.

The paints and chemicals industry is one in which many unpleasant accidents can happen unless unceasing vigilance and strict adherence to iron-clad rules and regulations are observed. For this reason especially the Hilo Corporation can be very proud of its excellent safety record.

Black — and How!

The use of two blacks—one printed over the other, resulted in an unusual and very striking intensity of color in a broadside for an automobile company recently lithographed by The National Process Company, Inc., New York. In addition to five colors, one black especially suitable for the printing of the half-tones was used, also a black made particularly for the printing of dense solids. The two were printed over each other to give an extraordinary brilliancy to the solids that formed backgrounds for the half-tone reproductions of various automobile models.

Forest to Larger Quarters

Forest Paper Company are now occupying their new and enlarged offices and warehouse at 87 Van Dam Street, New York. The telephone number is WALKER 5-5600.

Foreign Posters Outshine Domestic Ones

The Grand Award in the First Annual Exhibition of One-, Two-, and Three-Sheet Posters, sponsored by Transit Advertisers, Inc., with the idea of raising the standard of poster design in this country, was finally made on March 29 after four hours of consideration by the judges of the 250 entries. It went to Canadian Pacific Railways for their Wild Bear Poster.

From this Exhibition it seems apparent that the American poster is on the defensive. Almost any of the fifty foreign entries if displayed at a railroad station among typical domestic posters would certainly "steal the show," according to the opinion of many who have seen the Exhibition. It is to be hoped that this competition will be an inspiration to American advertisers to enlist the best creative talents in this field.

Veteran Hilo Executives Die

John H. Mills, director and vice president of Hilo Varnish Corporation, Brooklyn, died of pneumonia on March 12.

Mr. Mills, who started with Hilo in 1885 and remained active until a few days before his death, was widely known in the paint and graphic arts industries, having devoted much of his time to the development of varnish products for use in the ink and printing trades.

The Hilo Corporation suffered another loss on March 20 when William T. Handley suddenly died. Mr. Handley came to Hilo in 1910 and since that time he served continuously as superintendent of the grinding department. He was a Hilo director at the time of his death.

The addition being made to the plant of Lithographic Plate Graining Co. of America, Inc., at 41 Box Street, Brooklyn, N. Y., consists of a space 50 x 100 feet, and basement, instead of a space 25 x 50 feet, as was stated in The Photo-Lithographer last month. This addition will provide space for a number of new graining machines of large size.

More About TECHNICAL VS. RULE-OF-THUMB METHODS

By PROFESSOR ROBERT F. REED

Research Director, Lithographic Technical Foundation, Inc.
From an Address given at New York Trade School

(Continued from March issue)

Good Pressman Needs Sixth Sense

In the printing operation there are several complicating factors: the plate, ink, blankets, rollers and paper—too many factors for anyone to control by technical methods alone. Therefore, the pressman must depend largely on his experience and judgment. A good pressman develops something like a sixth sense which tells him if things are going all right or not. He must have some knowledge of paper; he must know how the plate and blanket should be packed; he must know how to adjust pressure and set rollers properly. That is the craftsman's job and it requires experience. Now ability, gained by experience, will never be taken away from the craftsman by technical methods. The time will never come when all a man has to do in the morning is to push a button and then sit down and watch the wheels turn until quitting time. On the other hand, there are certain things that can help this pressman to do more and better work. The technical methods that make his lot easier are, for example, air conditioning, paper conditioning, and pH control of the fountain solution. And don't forget that modern rollers and blankets, paper, ink, and even the offset press itself, are technical developments.

Paper Conditioning

However, to get the maximum benefit from technical methods, they must be applied with sufficient knowledge and intelligence. Take paper conditioning, for example. Perhaps it is not realized that to every thousand pounds of paper containing three per cent of moisture, it may be necessary at times to add as much as twenty pounds of moisture before it will work properly. At other times, the amount may be consider-

ably less, and the conditioning time will be correspondingly less. A conditioning time which was sufficient yesterday may not be sufficient today. Whether the paper is fully conditioned or not will not be apparent to the operator unless he is able to make some test on the paper to determine its condition. Otherwise, the conditioning may be only half done when the paper is taken out of the hangers. It was for this purpose that the paper hygroscope was developed some seven years ago. It is now being used to a considerable extent.

Air conditioning, of course, is technical control, and more and more lithographic houses are finding that it pays. But lately it has been found that simply hanging the paper until it reaches equilibrium with the atmosphere, even in an air-conditioned pressroom, is not enough. Paper, conditioned in this way, stretches during multicolor printing because it absorbs press moisture to the extent of one- or two-tenths of a per cent for each color. The solution of this problem is to condition paper to a moisture content a little above equilibrium with the atmosphere. The Bureau of Standards discovered this. I have been in touch with one or two shops that have been using it and are thoroughly sold on it. It has cut down their register troubles to a remarkable degree. I am told that in the Lithographic Department of the U. S. Coast and Geodetic Survey this method has made it possible practically to eliminate spoilage. They formerly figured on about ten per cent spoilage on their map work, in which they ran from seven to fifteen colors.

Inks Are Complicated Materials

Inks, the next problem in the lithographic plant, are quite compli-

cated materials. They are printed on paper which is also a complicated material, and it is up to the pressman in most cases to make the adjustment of ink to paper; this, without being able to measure with any degree of exactness either the consistency of the ink or the porosity or absorptive property of the paper. It is no wonder that the pressman is occasionally in trouble. A good deal of work is going on with the object of developing satisfactory methods for adapting ink to paper, and one of these days the problem will be solved.

Now, technical methods may seem like taking some prerogatives away from the pressman, but if they eliminate difficulties, the pressman will be able to produce better work. And, since he is a member of a team, the entire shop in which he is employed will be benefited.

Control of Fountain Solutions

Some three or four years ago the Foundation issued a bulletin in which it recommended accurate control of the acidity of fountain solutions. Such tests as had been in use, and in fact are still used in the majority of shops, are purely qualitative. They tell whether the solution is acid, but not how much. As a result, control of the water fountain consisted in continually adjusting the strength of acid to counteract either the tendency of the plate to thicken or to become sharp. However, with accurate control by the pH method, it is possible to start the plate with the right amount of acid and keep it running uniformly. This is another example of technical control.

Factors Affecting Register

I have talked about the conditioning of paper, but there are several other factors affecting register. The pressman knows this but usually has

had to rely upon experience and judgment; in other words, upon rule-of-thumb methods, to tell him whether the trouble is atmospheric or mechanical. This is another case in which technical methods can be of help, and these methods are not entirely new or original with us.

For satisfactory register the printed impression of the first color should be exactly the same size as the plate image, especially in the long direction of the sheet. If it is not, the paper has been distorted by the impression. Distortion can take place during printing of the first color and nobody will notice it. Mis-register only becomes apparent after the second color is printed. In many instances, when the first color is printed out of register, the hope of making succeeding colors fit is very slight.

Much register trouble can be avoided by carefully checking the dimensions of the printed impression against the plate image. If measurements show that they are not the same, there is something wrong. The paper can then be checked to see if it is in the proper condition. If it is found to be all right, and there is no evidence of wavy edges, the trouble is mechanical and must be looked for in the press.

Many Variables

There are many variations in the raw materials of lithography, and many of these variations cannot at present be detected in advance because we do not have sufficient knowledge to enable measurement of the qualities or the values that are required. For this reason common sense must be used in applying technical control. There is no point in adopting a large number of technical tests and controls that require time, when they don't accomplish anything. But if it can be shown that a test or control does accomplish something by improving either quality or production, then it is certainly worthwhile.

We do not yet know how to compensate for all the variables in process photography. This is especially true with regard to making color separations. Fortunately, photographic materials are manufactured under conditions of good technical

control. Some help can be gained by controlling density and tone range with the aid of the densitometer. But we must still rely largely on the experience and judgment of the photographer and of the correcting artist to produce good negatives or positives.

We do not yet know how to evaluate the plate grain. We only know that weighing or measuring the proper abrasive, maintaining a uniform weight of marbles and range of marble size, keeping the moisture as nearly constant as possible, and regulating the time of graining, helps to produce a uniform grain. Experience is, therefore, an important factor.

In printing we do not yet know how to measure the ink-receptive qualities or printability of the paper. If this could be done, it would prevent many headaches.

Human Element Is Least Controllable Factor

In every case where they can reasonably be applied, technical methods are far superior to the rule-of-thumb methods because they eliminate the errors of human judgment. We are familiar with the term "human element," and in industry we often hear the expression "removing the human element." To many this sounds rather harsh and revolutionary, but in many cases, as you know from your own experience, the human element is the least controllable factor in production. If the lithographic industry is to improve, as it must in order to maintain the competitive advantage in its field over other branches of the graphic arts, there must be some sacrifice of individualism for the benefit of the group.

Prof. Reed Answers Some Questions

Following his address Professor Reed conducted a forum, resulting in the following questions and answers

Conditioning Paper

QUESTION: Will you explain in detail the process of bringing the paper to one-half per cent moisture content above equilibrium with the atmosphere?

PROF. REED: The conventional method of paper-conditioning is based on the theory that paper, in balance with the atmosphere, has picked up all the moisture it can hold and therefore will not shrink or stretch as long as conditions remain unchanged.

The difficulty, however, is that the press blanket carries a small amount of moisture and deposits it on the paper. And since the paper is usually too dry when it comes into the pressroom, and is simply conditioned up to balance with the pressroom atmosphere, it is still greedy for moisture. It will pick up, on the average, about one-tenth of one per cent for each printing. It can be made to pick up as much as a half per cent if excessive moisture is carried on the plate.

What happens is a gradual accumulation of the moisture and a gradual expansion of the sheet.

To overcome this difficulty, it has been found best to condition the paper to one-half to three-quarters per cent moisture content above equilibrium with the pressroom atmosphere. When this is done, the press moisture will not be added to the sheet during printing. In other words, the excess moisture which evaporates from the sheet will just about balance the moisture added by the press. This excess moisture can be supplied by conditioning the paper in an atmosphere five to eight per cent relative humidity above that of the pressroom. This can be done in a separate conditioning room or in a closed conditioning machine equipped for recirculation of air and means for the controlled addition of moisture.

Of course, if the shop is equipped with air-conditioning, the mainte-

nance of a separate paper-conditioning room is most feasible. If not, the only solution of the problem is to use a paper-conditioning machine equipped for recirculation and controlled addition of moisture.

Measuring Coarseness of Plate Grain

QUESTION: Is there any method today by which the coarseness or fineness of the grain is standardized? For example, most of us have had occasion to order 000-grain, and it sometimes turns out that the grain is much coarser than we thought we would get. Is there any method of measuring coarseness of grain?

PROF. REED: There is no method of measuring coarseness, that is, measuring the distances between peaks in the grain. The depth of the grain can be measured, but this is tedious and difficult and is not practical. There are microscopes with micrometer adjustments, by which you can focus first on peaks and then on the valleys and measure the distance between. For any degree of accuracy, however, it is necessary to make half a dozen or ten measurements and then average them. But that is not practical for production.

Frankly, I don't know at the present time of any practical method for measuring the coarseness of the grain. The only method of grain control I know of is that of selecting standard samples and comparing them with grained plates. This is one of the things that must be done by observation, at least until someone discovers a better method.

Light Does Not Affect Bichromate

QUESTION: Does a solution of bichromate decompose when it is exposed to light, if it is not mixed with a colloid?

PROF. REED: No, it does not. Light does not affect bichromate unless there is some organic material present which can be oxidized by the bichromate. Otherwise, it is very stable.

Polymerized Alcohol

QUESTION: In the last few weeks we have heard of a polymerized alcohol that can be sensitized and which is

not affected by humidity. Is that possible?

PROF. REED: I do not like to comment on that question because so little information is available at the present time. The claim has been made but not verified.

Affect of Adulterants on Solutions

QUESTION: In one of your bulletins you give a formula in which you state that nine ounces of gum arabic to twenty-three ounces of water will give a solution of about 14° Baumé. I have tried powdered gum, nine ounces, and twenty ounces of water, and the solution seems to have the proper viscosity. However, it was so far below 14° Baumé that I had to add about six more ounces to bring it up. By that time, however, the solution was so viscous I couldn't use it at all.

PROF. REED: Was there very much sediment in the solution?

QUESTION: No, the gum had all dissolved.

PROF. REED: The only thing I can suggest is that this gum may have contained an adulterant of some kind.

QUESTION: It was very heavy as far as viscosity was concerned.

PROF. REED: If gum arabic is pure, the viscosity of its solution at any given specific gravity or density is practically constant. A gum arabic solution of 14° Baumé will always have about the same viscosity. Occasionally you find a bad lot of gum, however, which gives a gelatinous solution. Usually, however, the density of the solution made according to the formula mentioned is correct. I would like to see a sample of that gum.

QUESTION: I wanted to get in contact with you, but I didn't think it was possible. If you would be interested, I will send you a sample.

PROF. REED: If you will send me two or three ounces of the gum, I will be glad to test it.

Registering Density of Mixtures

QUESTION: If we should try to dissolve powdered albumin or gum, suppose it did not all dissolve, but somehow or other some of the powder became suspended in the solution, would the hydrometer register

the density of the solution alone, or the density of the mixture of solution and suspended matter?

PROF. REED: It would register the density of the mixture. This is a question that has puzzled many people. For instance, will a foam show the density of the liquid or the density of the mixture of the liquid and air? The hydrometer test will show the density of the mixture in every case. If a heavy powder could be suspended in water, the hydrometer would show the density of the mixture, not that of the water alone.

QUESTION: In dissolving gum arabic, we sometimes get bubbles in the solution. Wouldn't the hydrometer register the density of the mixture of air and liquid?

PROF. REED: Yes.

QUESTION: In other words, to get a true measurement on the liquid, you must eliminate the bubbles?

PROF. REED: Yes.

Plate Graining Methods

QUESTION: Has there ever been an attempt made to obtain a grain by other than the method now used?

PROF. REED: Yes, many times. There have been a number of attempts to grain plates by sandblasting. But to my knowledge none of them has proved satisfactory to date. There have also been many attempts to obtain a grain by chemical action, such as dipping the plate in hot acids of various types, and producing the grain by corrosion. So far none of these methods appear to have worked out successfully.

Streaks in Tints

QUESTION: In a great many cases of tinting on a sheet, streaks appear across the press—sometimes a half-inch, sometimes a quarter-inch wide. They don't seem to correspond to the gear teeth or anything on the press. Is there any mechanical explanation of why the tint is in streaks?

PROF. REED: Yes, I believe there is an explanation but I won't guarantee that what I suggest is the right one. I think in many cases the streaks are caused by a frictional slip between the blanket surface and the plate. In other words, the adjustment of diameters for rolling contact

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between the plate and the blanket is not exactly correct, with the result that the surface of the blanket becomes momentarily deformed. The grain takes hold of the blanket surface and pulls it in one direction for a short distance. Then there is a slight slip, and rolling continues a little further, followed by another slip. This action seems to result in an accumulation of tint in a series of streaks. This tint may either occur in the areas where the slippage takes place or in the area where there is no

slip; I don't know which. The streaks don't correspond with the gear teeth. That is the only way that I can account for them.

Scratch-Proof Inks

QUESTION: Have you any suggestion regarding how to make scratch-proof inks for lithography?

PROF. REED: We have not studied this problem. I might say, however, that scratch-proofness is apparently a function of the ink itself. Scratch-proof letterpress inks have been

made, and no doubt these are what you are trying to duplicate. The best suggestion I can make is that you find a good ink man and see if he can solve your problem. The scratch-proof letterpress inks are made with a vehicle that is largely synthetic, and which dries by polymerization to a much harder film than ordinary linseed oil varnishes, producing a relatively scratch-proof surface. I understand that makers of lithographic inks are now working with synthetic vehicles and, under certain conditions, are getting good results. But I don't think such vehicles are as satisfactory as the linseed varnishes as far as working on the offset press is concerned. No doubt there will be further developments in this direction.

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"Fortune's Fortunates"

Eagle Printing Ink Co., Division of General Printing Ink Corporation, 100 Sixth Avenue, New York, accomplished a most effective stroke of publicity when it issued recently a large mailing consisting of a twelve-page form of full color pages printed with Eagle inks for the March issue of Fortune magazine.

An actual Fortune cover enclosed the form, and on one page Eagle printed its own story, which said in part: "... some finger pointing is forgivable for those fortunate enough to have contributed to Fortune. Eagle Printing Ink Company has supplied inks for many of Fortune's letterpress covers, editorial and advertising forms ever since the first issue, February, 1930. . ."

"Fortune's Fortunates" was Eagle's happy choice of a title for this impressive piece.

Don't forget the cast. Every professional show has a cast, whether it consists of the nine men on a baseball team, the fighters in the ring, Garbo in a movie, or characters in a book. Think how dull your newspaper would be if we took out the names of all people. Yet, I see business men putting on their show without a cast. I see expensive window displays with only merchandise and no reference to people. I hear sales talks that never mention a person—no pictures of people, no references to people, no testimonials. Don't make the mistake of trying to put your sales show on without a cast. No cast soon means no audience.

—Zenn Kaufman, before the Sales Department of Sears Roebuck.

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SPECIAL CONVENTION ISSUE of THE PHOTO-LITHOGRAPHER

This issue, to be published early in May, will
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of The Lithographers National Association, to
be held in Hot Springs, Va., May 10, 11, and
12, and other interesting editorial material con-
cerning the Convention.

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N.A.P.L. WILL MEET IN WASHINGTON

IN a meeting of the Board of Directors, held in New York, March 26, it was voted to hold the 1938 convention of the National Association of Photo-Lithographers in the Wardman-Park Hotel, Washington, D. C., October 6, 7, 8.

The program, which is being drafted, will include round table forums on selling, production and management, with leaders in the

industry contributing from their experience to answer questions.

Exhibit space will be available for those who sell to the industry at \$100.00 a panel.

Cost Committee

The Cost Committee of the National Association of Photo-Lithographers met in New York, March 25, to study cost data on equipment

used in the industry. After this Committee has completed its work, it is expected that a cost manual will be issued to the members of the Association. In the interim, actual jobs are being distributed to members of the Association, with specifications and detailed estimates showing the time of the various departments, the hourly costs, and extensions. These detailed estimates, when filed in a looseleaf binder, provide excellent educational material with which a firm can check up its own cost information.

The members of the Cost Committee are: William J. Volz, Sackett & Wilhelms Lithographing Corp.; S. Edwin Earle, Northern Lithographing Co.; F. A. Myers, Copifyer Lithograph Corporation; George E. Loder, National Process Company; Archie Spaulding, Spaulding Moss Company; Keith Rosser, Dando-Schaff Printing & Publishing Co.

Photo-Gelatine

A demonstration on how to turn out photo-gelatine work will be conducted in a photo-lithographic plant in New York within a few weeks. This demonstration will be open to all key men who are employed by members of the National Association of Photo-Lithographers. If you are interested in having your men witness this demonstration, please contact the Secretary for further information.

Ratio Data

The New York Photo-Lithographers recently moved to gather monthly sales figures from member plants for comparative purposes. Through this kind of information, ratio of sales activity between competitors and the industry as a whole can be compared. With ratio comparisons available, a firm whose sales drop considerably can know whether this drop is the individual experience of its plant or general in the trade. After this plan is in effect, it is planned to extend ratio comparisons to include member plants in the National Association of Photo-Lithographers.



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New Pitman Catalog Contains Many Items

The latest catalog of the Harold M. Pitman Company is far more extensive than any catalogs ever issued before by this well-known company. Its forty pages and cover contain illustrated descriptions of more than 350 items covering a wide range of metals, supplies, and equipment necessary for reproduction processes in lithography and photo-engraving.

Since its establishment in 1906, the Harold M. Pitman Company has remained continuously under the ownership and management of Harold M. Pitman. The stability of the Company's organization is reflected in the excellent standing enjoyed by the Company in the lithographic industry throughout the country.

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Costs Cut by "Smoothol"

A number of lithographers have reported substantial savings in the production of label work through the use of "Smoothol" Ink Wax, a reducer manufactured by Francis X. Smith Company, Brooklyn, N. Y. They claim that the use of this reducer makes slip-sheeting unnecessary. Some lithographers claim savings as high as 25% through the use of this reducer, not only because it cuts down the need for slip-sheeting, but also through other production economies made possible by it.

Maxwell Offset in its four colors, ten finishes, and seven weights, is attractively presented by The Maxwell Paper Company of Franklin, Ohio, in a new portfolio. The portfolio contains among its samples a folder advertising the districts surrounding the new Golden Gate Bridge, San Francisco.

APRIL 1938

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IMPORTANCE OF THE OFFSET PRESS IN THE GRAPHIC ARTS

By ADAM HENRI REISER

ONE of the most talked parts of the lithographic process is the offset press, and offset presswork. The current interrogatory of radio's comedienne, Snooks, "Why, Daddy?" will be repeated by the men of the various other branches of lithography. Why is presswork more important than camera, art, stripping, transferring, plate making, plate graining? Without these, there can be no press plate.

Three reasons may be advanced for this asserted importance of the offset press:

1. The embodiment of the offset principle and its effect on the kindred branches of the graphic arts.
2. The psychological effect of the offset press being the final step in the production chain.
3. Its potential possibilities and strength have not begun to manifest themselves even with its present tremendous influence.

THE EFFECT OF THE OFFSET PRESS ON THE GRAPHIC ARTS

Everyone agrees that the offset press has had a mighty important part in the growth of lithography. The introduction of the precision-built offset press revolutionized lithography, even as the influence of the press is now doing to typography. Without the offset press, your photolithography of today would never have led the way in the graphic arts.

In typography, precision construction used by offset builders, is being carried over to the new letterpress equipment. As a consequence, tremendous speeds, more shallow etching, and more speedy makeready are not only possibilities in typography, but already are claimed for some presses. That is only part of the story of offset press effect on typography. Indirectly, the effect has been widespread, and has resulted through competition in advancing methods, in gravure as well as typography.

Men who have spent years in lithography are even now working on photo-gravure, using the photo-litho method of deep etching the cylinder. Who can tell but what the offset principle applied to an improved gravure will result in three-color printing such as the world has never before seen. So you see, impetus has been given not only to lithography but to all kinds of putting ink to paper.

More evidence of the importance of the press and its operation lies in the numerous requests to trade journals for information on ink and color mixing, press-operation, and other technical information. True, this applies to other branches as well, but not in such volume. Truth to tell, we are part of an industry that is growing rapidly. Lithography can be compared with the gangling youth whose suits are bought for him many sizes too large—you who have families know the signs. "The suit must last some time, and the boy'll grow into it." So it is with us.

PSYCHOLOGICAL EFFECT IN SHOPS

Offset presswork is the last step in a series, and as a consequence is looked upon as the money-maker in the plant. Work must be made to suit the press. Therefore the psychological importance of the press in the process. It takes no great deal of effort to recall incidents in shops where considerable friction arose between departments: artists quarreling with pressmen because quarter tints on their art work wind up as three-quarter tints on the finished press sheet or because one-eighth tints disappeared entirely. Catch-ups in the early handling of the plate on the press, resulting in image wear, as a result of attempts to clean out the catch-up; ghosts; streaks of various kinds; misregister; wrinkles; colors off-shade; flat colors; these are some of the bones of contention. Plate-makers who nurse their plates, using no ammonia in their solutions, and

none to develop their plates—even baking in extremely long runs, yowl when the plates fail to stand the gaff; all these have their effect on shop dissensions.

POTENTIAL POSSIBILITIES OF OFFSET PRESS

You who have read the technical press are familiar with the controversy that arose between press-builder and the operations crew. Builders complained of the inadequacy of trade knowledge held by the pressman and his operator, which, it is asserted, resulted in many cases in an inferior product, and a small quantity of that product. Offset presses have reached a high in quality but the personnel is not up to getting a maximum performance from these machines, was asserted by some press-builders. Built to run 5,000 sheets or more per hour, a daily average of 2,000 to 2,500 is hardly cricket, so the talk goes.

Of course, this question has two sides, just as any other question. If the press had more of the gadgets easily accessible, then perhaps greater production would ensue. Tales of arms with three or four elbows so that the pressman may reach into the innards of some of the two-color machines to make adjustments—time lost in compensations for roller sag have been told repeatedly. Just think what a 175 pound dampening device means; or picture rollers on a 186" press sagging because of their weight. Why not use hollow tubes for such ink rollers?

Cams, rollers, skeleton wheels, bands, all leave their mark on the printed sheet unless they are moved to sections where their presence is not felt. Inkers, dampers, guides, need adjustments that consume considerable time, all of which detracts from daily averages. Why, damper adjustments in themselves are so awkward at times, it becomes impossible to

(Concluded on page 80)

THE PHOTO-LITHOGRAPHER

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Hard-Tex Inks Kit Now Available

For the convenience of metal decorators and others interested in metal decorating inks, The Fuchs & Lang Mfg. Co., division of General Printing Ink Corporation, are issuing a handy kit of Hard-Tex inks as pictured.

Hard-Tex inks are the outcome of years of careful planning and research

by Fuchs & Lang, followed by many months of practical production tests in average press-rooms where their performance has been checked under most exacting conditions.

Hard-Tex inks, according to the claims of Fuchs & Lang, have unusual working properties, print sharp and clean, trap well, do not dry on press, and create no unusual wear on plates, blankets, and rollers.

Court Upholds Jury Award for Advertising Ideas

MANY lithographers and others engaged in graphic arts depend for a large amount of their sales on the acceptability to prospects of ideas for new and effective uses of advertising material, utility forms, etc. In many cases the ideas are very abstract in the sense that they suggest new ways of wording or arranging individual advertising messages, etc., and therefore are not subject to protection by copyright, patents, and other means such as are available to creators of new products.

Such originators of ideas as well as products may be interested in a recent decision of the Court of Appeals of the State of New York, which upheld a jury decision awarding J. A. Healey \$2,500 for ideas constituting an advertising plan which were submitted by Mr. Healey to an executive of Macy's department store and which the store later used without compensating Mr. Healey.

Mr. Healey admitted there was no written contract, but claimed the existence of an oral understanding.

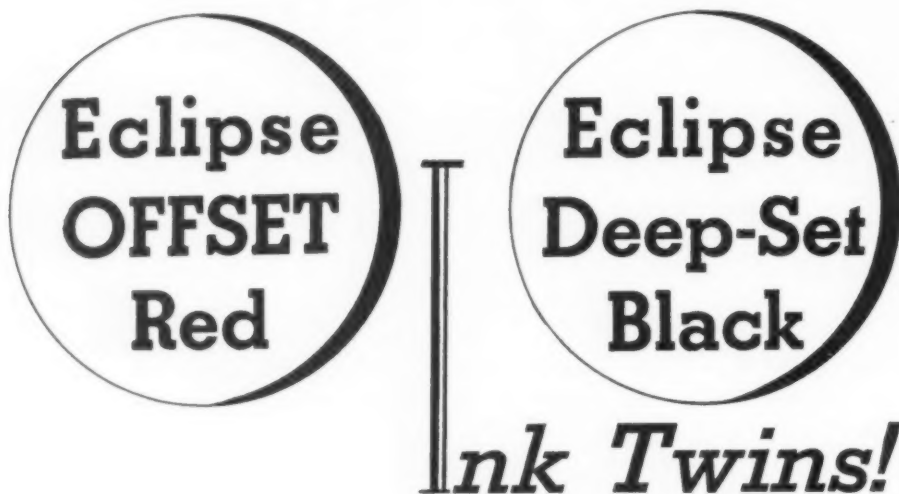
The decision was in line with decisions made in several other recent cases for protection of ideas submitted.

Unique English Paper Is Introduced to American Lithographers

Gateway Offset Paper, for which Japan Paper Co., Inc., New York, recently became distributors in the United States by arrangement with the English manufacturers, is an unusual paper because it is a two-ply paper, even in the lightest weight, 23 x 36, 60 pounds to 500 sheets.

This means that there is no wrong side to Gateway, and is claimed to have extraordinary strength, durability, purity of color, texturing, and opacity.

Gateway, available in seven sizes, but with special sizes made to order, is expected to be very popular for fine book work, in cases where a paper with absolutely even texture on both sides is an essential.



They act alike. Both are brilliant, snappy, clean.

Both are very fast to light.

Both are excellent working inks.

Don't handicap good plates and expert presswork in turning out a good job. Start at scratch with an Eclipse ink.

Eclipse is only one of the high-quality offset and letterpress inks made by us, both in black and colors.

Gaetjens, Berger & Wirth Inc.

**Gair Building, 35 York Street, Brooklyn, N. Y.
538 South Clark Street, Chicago, Ill.**

Dual Control ADENA OFFSET

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- WILL NOT CURL

The moisture content of ADENA OFFSET is automatically controlled while it is being made on the paper machine.

And additional control is afforded by a perfectly air-conditioned finishing room. This COMPLETE CONTROL all the way through the process of sheeting, careful sorting and packing, assures your complete satisfaction!

PRICED FOR QUANTITY RUNS

Dual Control lets you put Adena Offset on the press right from the case or skid!



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CHILLICOTHE—a buy-word for high grade papers

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It doesn't take a great imperfection in a plate to cause it to be made over with probable costly delays. And when chemicals are about the least of your costs, it pays to use the best obtainable. The Mallinckrodt line is complete from A to Z, and we call special attention to Mallinckrodt Collodions, and our recently improved Bichromate, which users tell us is a "masterpiece among chemicals." The complete lines includes—

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Boric Gallic
Chromic Lactic

Phosphoric
ALBUSOL*

(Albumen)

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Ammonium-Bichromate
Collodion
Ether
Glycin
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Iodine

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Iron Sulfate

Paraformaldehyde

PICTOL*

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MONTREAL

THE main office was dark. A restful hush had settled over the production office. The office boy had licked his last stamp, and disappeared in the elevator, loaded with the out-going mail. A bright beam of light stabbed into the darkness outside the President's office. From the partly closed door came sounds of verbal battle within. Jimmy, the janitor, broom in hand, paused and sighed, as he peeked into the well lighted room.

"Gosh, they've been at it like that for over an hour; looks like I'll never get home tonight."

Inside, the shop foreman rolled a well-chewed cigar to the other side of his mouth and said: "I tell you, that estimator has got to give us more time allowance on a job of this kind. I didn't understand there would be so much work on it."

"Ten hours is enough shop time" growled the sales manager, "and besides, you will have to finish it by Thursday whether you had enough time allowance in the estimate or not. We accepted the job with Thursday as a deadline."

"Just a moment now, gentlemen," said the president, "You have both overlooked something. We must get back to a primary idea. What is an estimate? An estimate is a detailed listing of all the costs in both material and labor that enter into the making of a job. What is its purpose? Its purpose is to determine in advance of manufacture, the price at which a job can be sold. How should it be used? It must be used as a pilot to show:

First—Through what channels the work must go to arrive at a given result.

Second—How much it will cost in labor and materials and overhead to follow these channels.

But, remember, you are to follow those channels and you must follow the pilot or chart in spending both labor and materials. If you do not, I must know the reason why.

"What I have said applies to most any business; but in photo-lithography we make a custom made product; we do not do 'straight line' production. No two jobs are alike,

A TALE OF ESTIMATING

By LATHAM B. MYERS

except some combination jobs. None of them takes the same kind or amount of material, or goes through exactly the same steps; and each one uses a different amount of labor.

"To deliver our custom made job in exactly the way the customer wants it, we must have exact and specific information in advance before any work is done. To show a profit for ourselves after the job has been delivered, we must have followed our specifications as outlined in the estimate.

"Our conference tonight has been necessary because you fellows did not understand the work as outlined in the estimate. In the future look it over twice, and if you cannot follow it, let me know in advance."

There was an air of finality about the last words, and the meeting broke up, and everyone's mind drifted to pleasant thoughts of hot suppers.

Well, the boss was on the right track about the importance of good estimates. He had found them very important in his business. Maybe they are just as important in yours and mine. Let's consider them more closely.

How is an estimate made up? How does one go about arriving at a price on a litho job? For purposes of calculation, let us say there are two kinds of jobs, simple ones and complicated ones. The complicated ones we will call those involving great complication in register, or in means of separating colors. The rest of the jobs we will call "simple," because they do not involve any of the above problems, and these we will consider first.

The first point to determine is the layout. This is the key to any job. If the layout is correct you are on the track to a correct price. If the layout is wrong, the price will surely be wrong too. So, consider carefully the following points:

How many units might be printed on one sheet?

Is it cheaper to multiply the subject, or to run it one up?

—What size press should it be run on?

How can the subject be multiplied—extra negatives, or double exposed, or stepped up?

What are the register requirements?

How does a multiple subject layout affect the binding or final finishing operations as to price?

How many press plates does the entire job make?

If these questions are correctly answered, the worst part of the calculations is over; or perhaps it is better to say that the "imagining" or "visualizing" part is settled. The rest is careful attention to details, and noting how each part or detail you add affects the parts already included.

Here are another set of questions to ask yourself to be sure nothing is omitted:

Is the copy ready to shoot or is there art work to be done, paste-ups to be made, retouching to be done, or composition to be set?

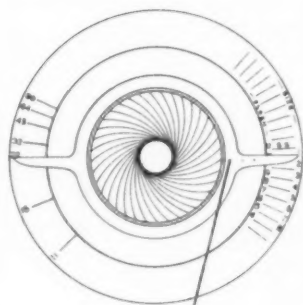
How many half-tones, how much area to each one, how much are they worth, and how much do they increase the cost of multiplying the subject on the plate?

When these questions are settled, the estimate becomes a matter of arithmetic and straight calculation. Add the cost of negatives, stripping, opaquing, color breakup, plates, proofs, press costs, paper, cutting, binding, finishing, shipping. This total will be then added to the art costs complete, except for any mark-ups on purchases made from other firms.

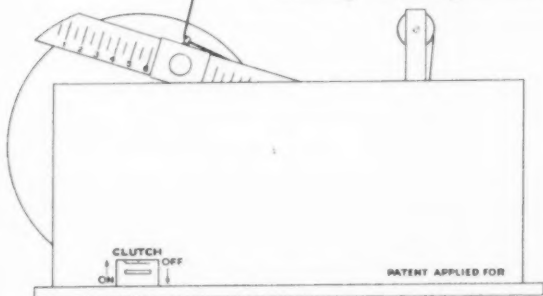
It is customary, among many houses, on simple jobs to lump all the costs from the time copy is complete until the final plate is made. This figure is called the "plate" cost, and represents the cost of photographing, stripping and opaquing, and plate making. This figure varies only as the size of the plate or the number of units per plate increases. The average "plate" cost figured this way, is based on film negatives, 8½ x 11 in size, black and white, no extra strip

The Automatic
HALFTONE
DIAPHRAGM CONTROL
is especially helpful

- to insure quality;
- to increase production;
- to secure uniform results;
- to reduce length of exposures;
- to prevent film waste;
- to save camera man's time;
- to increase the camera man's faith in himself.



a device that automatically times light exposure and cuts off at exactly the right time.



The Automatic Diaphragm Control will be demonstrated any time, by appointment, in our plant. Specimen sheets on request.

R. P. NEWICK
187 SYLVAN AVE. NEWARK, N. J.

4

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NEW YORK
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CHICAGO
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HUNT'S

**PHOTOGRAPHIC
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111 BINNEY STREET
CAMBRIDGE, MASS.

Shown herewith is a suggested estimate form, which is easy to use, and simple, yet there is ample space for most needs. This form is only good for jobs figured on a full plate basis, and is not applicable to jobs requiring accurate breakdown of costs of negatives, stripping, photo, and plates. It is suggested that the salesman fill out the top, and left hand side information before giving it to the estimator. This practice helps get the vital items of a job down in

The space in the lower left hand corner is the "shopping box" where all quotations relating to this job can be noted. This is a useful space, because all suppliers do not take the trouble to confirm quotations given over the phone. Items regarding special sizes, weights, and deliveries on paper, if noted here will be picked

On the back of the estimate form is printed an outline of a layout, with each side marked off in divisions to aid the estimator in sketching a rough layout. Since the layout is the key to the entire estimate, it surely is the most important item to have noted down. It is the spot to which anyone checking the estimate must first turn to see how the job is figured. The sales manager, shop layout man, and the person buying the paper will enjoy using an estimate that has a graphic sketch of the layout.

SIMPLE ESTIMATE FORM				Order No. _____	
Customer _____		Salesman _____			
Address _____		Date _____			
Individual _____		Name of Job _____			
Phone _____					

	Pieces of Copy	No. of Prints	Description	Trim Size	Kind of Paper	Halftones

	Quantity				
Front	Art Work				
COLORS: Back	Typing				
Cover	Copy Preparation				
BINDING:	Plates				
	Black				
	Color				
COMPOSITION:	Step Up				
	Black				
	Color				
ART WORK:	Positives				
	Cover Plates				
	Black				
	Color				
RETOUCHING:	Tints				
	Halftones				
	Proofs				
KIND PROOF WANTED:	Total Plate Cost				
OUTSIDE PRICES --QUOTATIONS	Press				
	Black				
	Color				
	Cover Blk.				
	Cover Color				
	Wash Ups				
	Fold				
	Cut				
	Collate				
	Punch				
	Stitch				
	Pack and Ship				
	Composition				
	Outside Art				
	Letterpress P.W.				
	Paper				
	Cover Stock				
	Misc.				
	Mark Up				
	TOTAL				
	QUOTED				

Company	Work	Price

THE PHOTO-LITHOGRAPHER

SAM'L BINGHAM'S SON MFG. CO.

MANUFACTURERS OF

LITHO-OFFSET ROLLERS

MADE AS ORDERED OF

VULCANIZED OIL or LITHO-PRINT

ORDER THROUGH THE FACTORIES BELOW:

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CHICAGO
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DETROIT
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INDIANAPOLIS
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Pacific Coast Representatives:

CALIFORNIA INK COMPANY, INC.

SAN FRANCISCO, LOS ANGELES, PORTLAND, SEATTLE, SALT LAKE CITY

EQUAPO

"ANOTHER TRIANGLE TRIUMPH"

A NEW OFFSET BLACK THAT GIVES AMAZING RESULTS

This brand-new Offset Black Ink our chemists have recently perfected has a density that will surprise you. It works smoothly on the press; has all the coverage you expect; dries quickly, yet does not tone down; gives to solids that rich, velvety effect your customers like, yet prints type and

fine details of halftones as clean and sharp as could be desired. Test out EQUAPO on the next job for a fussy customer. You will then agree that it is the finest offset black that has ever been produced with complete opacity, richness of tone, yet moderately priced.

Two other inks we have at last perfected and offer to the lithographic trade as the best of their kind are a Permanent Persian Orange and a Transparent Permanent Yellow. These will not drop out, and are free from those defects you may have encountered in other yellow and Persian orange inks. Test out these inks, too, and you will be agreeably surprised at the results they give.

TRIANGLE INK and COLOR CO. INC
Manufacturers of Fine Litho & Printing Inks for All Purposes

Service Offices
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231 CONGRESS STREET, BOSTON, MASS.
1036 BEAUBIEN ST., DETROIT, MICH.
13 SOUTH 3RD STREET, ST. LOUIS, MO.



Main Office & Factory
26-30 FRONT STREET, BROOKLYN, N. Y.
Telephone Triangle 5-3770-71

Like hundreds of
others, you will say
"They're OK" when
you try

Okay OPAQUE

Assures better finished halftones — and quicker... Smooth flowing for the rapid brush sweep; dense opacity; quick drying; non-cracking.

Okay DEVELOPING INK

Means dependable press plates in shorter time. Easily applied to any metal; clear, sharp, and acid resistant image; stands up for long life on press; releases easily, under high humidity from bare grain.

Okay CELLULOSE OPAQUE

For Masking. An opaque that really opaques.

Okay WET PROCESS PLATE

Oil Base. Designed expressly for wet process... Many lithographers say "It's perfect".

One trial of our "Art" Photo Lithographic Black will convince you of its density, gloss, and non-offsetting qualities.

Send for prices and samples to

FRANCIS G. OKIE CO.

247 S. Third Street Philadelphia, Pa.

or their Agents. Also manufacturers of High Grade Photo Offset Inks, Fine Printing Inks, Compounds, etc.

A REASON WHY

*every one who sells to
lithographers should
advertise in The Photo-
Lithographer.*

It is thoroughly read both
by the men who buy — in
the office, and by the men
who have important influ-
ence in the matter of what
should be bought — in the
shop. They appreciate its
instructive and educational
editorial content covering all
phases of photo-lithography.

STUDIES IN SALES MANAGEMENT

For Administrative Heads and Ambitious Salesmen

By WILLIAM WOLFSON

Part Five

ASSUME you engage a man to dig a ditch. He is found to be inefficient, slow, careless, and not dependable—so you fire him. Then you hire someone else. The second man is not told to start digging anew—he starts where the last fellow left off.

With many photo-offset houses the reverse is true with new salesmen. They are hired; given samples and instructions; and are left to shift for themselves. In other words, footwork and spadework of predecessors are disregarded. Unless a prospect telephones or writes, he is not followed up. Accounts opened are either turned over to some of the salesmen or are considered as house accounts.

This happens when the proper sales records are not kept. As a matter of fact, the only sales records maintained are those of sales credited to the individual salesmen. Thus one of the heads or the sales manager, can perceive that Salesman A is just about holding his own (compared with his draw); that Salesman B is now three hundred and fifty dollars in the hole, and something ought to be done about it; that Salesman C had an extra fine month in March; and so on.

These *are* records, certainly, but what they show are monthly sales only—no more or less. They do not indicate how Salesman A may be helped. They flare a danger signal in the case of Salesman B. As far as Salesman B is concerned, his monthly sales record shows he has been gradually falling behind. The chances are when the first slow month was noted, it was hoped that the next would be all right. The second month was seen to be like the first—but what was done about it? Nothing. Perhaps the salesman was admonished, cautioned. That is not the same as helping him make good.

Let us take another case. We have a photo-offset house with a number of men on the sales staff. Most of

them have been with the house for some years. They manage, on the average, to maintain about the same sales volume month in and month out. Someone suspects they are content as a body with the sales made; that they make the rounds of customers; but that they do not put forth extra efforts in prospecting and calling upon new prospects. Thereupon a simple form is devised, for the salesmen to fill out daily. Each salesman lists the names of companies called upon, and states whether the call is on a customer, a follow-up, or a new prospect. Such form is deemed to be sufficient incentive and reminder. These daily reports are quickly scanned and then filed away.

However, such report cannot be said to be a sales record. More than a "list" is involved in true sales records. Let me here repeat what was mentioned in the very first installment of this series of articles. I give the gist of it in a paragraph of questions, as follows:

Take any salesman. Is he qualified to determine what firms he should call upon? Does he call upon too many? Too few? Does he confine himself to a certain territory, some particular types of businesses, or does he hop, skip and jump about without system or plan? Does he make the most of his personality; his knowledge of photo-offset lithography; any special knowledge due to previous training? Is he attempting the impossible? Going after the wrong kind of business (unprofitable or impossible for the house)? Does he take advantage of direct-mail sent out by the house? Does he waste precious hours?

These questions could be strung out endlessly. What I wish to emphasize is this: *There should be profitable control of salesmen's activities. Furthermore, such control is not possible without proper sales records.*

Please note: Give a dull-witted errand boy a package containing five hundred photo-offset copies, and tell

ILLINOIS PLATE GRAINING CO., INC.
913-921 WEST VAN BUREN STREET
CHICAGO, ILLINOIS

Fine Quality
**GRAINED ZINC
GLASS
ALUMINUM & MULTILITH
PLATES**

Prompt Service Reasonable Prices

WESTERN LITHO PLATE & SUPPLY CO.
1019 SOULARD STREET
ST. LOUIS, MO.

MAY WE HELP YOU
to speed up make readys

By reducing your paper troubles such as distortion, wrinkling, static, picking, misregister and obtaining the correct moisture content. Or if you are troubled with any of the other mechanical ills of lithography as listed below, our experience in solving these problems may help you to make substantial savings.

Moisture control and
paper conditioning

Lack of depth and
sharpness of grain

Press streaks and
distorted halftone dots

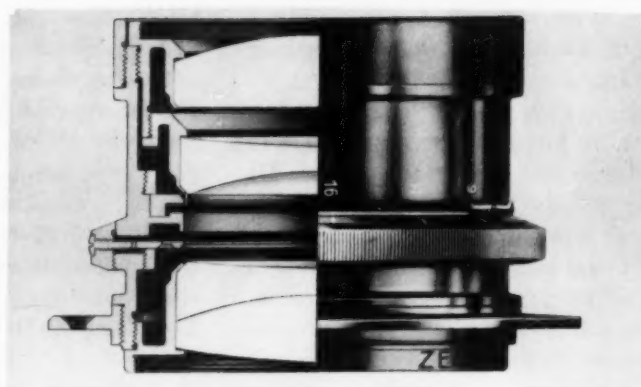
Illuminating and
arc lamp problems

Excessive plate spoilage
and short plate life

A. C. brakes and change
over from D. C. advice.

If your technical man cannot give his undivided time to
the solution of your problem

Consider Our Consulting Service
C. W. LATHAM ASSOCIATES
6 LAFAYETTE AVE. BROOKLYN, N. Y.



ZEISS
Apo-Tessar, F/9

THE high degree of correction, and the fineness of definition possessed by the ZEISS Apo-Tessar, are of great advantage in black and white reproduction, but their most striking usefulness is in difficult color work. Here the several separations may be made through different filters with the camera locked in one focus adjustment throughout. The flatness of field, and identic size in the resulting negatives, meets most exacting color process plate requirements. Catalog free upon request.

CARL ZEISS, INC., 485 FIFTH AVE., NEW YORK
728 So. Hill St., Los Angeles



Actual unretouched
photomicrographs
show why
EGGSACT,
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gives such distinctly
superior results

An EGGSACT printing surface is practically free of impurities and insoluble matter, whereas ordinary egg albumen produces large surface cracks and minute fractures, due to presence of natural impurities and insoluble matter. An EGGSACT coated plate prints clear-edge impressions of the halftone dots... sensitize your plates with EGGSACT.

IEGGSACT

THOR HOLLAND COMPANY
7048 JONES AVENUE, N. W., SEATTLE, WASHINGTON

him to deliver it. But put no address on the package. He will ask, "Where do I take this?"

Now give a newly engaged salesman his kit, wish him good luck, and tell him "to deliver the goods." He sees no label, no address (unless you hand him some leads), nevertheless he starts out. He has a general idea where to go—or has he? He dare not ask you where to go, for that condemns him immediately in your eyes. Yet he needs such instructions. You cannot dismiss this need on the part of the salesman with the generality that "every business house is a possible prospect."

The easy way out would be to copy names out of the classified telephone directory. Take, for example, fields who use catalogues—hardware manufacturers or jobbers. Turn these over to your salesman. Tell him you believe these companies have catalogues; to make a play for this business; to report what's doing.

But in so doing you do not enter upon profitable control of the salesman's activity. You should have something more concrete. You would have, had you begun and maintained a master record of customers and prospects. Each prospect turned over to the salesman would then be definite. For example:

"Jones & Company, manufacturers of locks. See Mr. John Andrews, Sales Manager, also in charge of advertising. Has been on our records for two years. Received a number of our mailing pieces. We were given an opportunity to quote last year, our prices seemed right, but Smith, the salesman who contacted him, could not close. I, your sales manager, met

Mr. Andrews personally. He promised us business, but as yet there is nothing doing. I believe that you are the type of personality that can get under his skin. For two reasons: you know production methods intimately, and Andrews hates details, would be glad to shoulder them off on someone he can trust. Also, your social intelligence rating is high, on a par with Andrew's. You two ought to get along. Take along the samples in Package A. Don't attempt to sell Andrews. Try to arrange to get him up here to inspect our plant within the next week. That's your first objective. Follow through. Next week, see me as to further instructions."

Would a salesman welcome such specific instructions as given in this assignment? I think so.

This imaginary assignment reveals a number of things. (1) The prospect has been cultivated by mail. (2) The financial rating, the possible volume of business, is known. (3) Prices quoted are in line. (4) How the prospect is to be handled is indicated. (5) Personalities of prospect and of salesman are considered. (6) The work that can be had is just what the house can do well because of equipment and skilled help. There are plenty of samples to prove this.

In passing, let me touch upon this "social" intelligence which was mentioned. There are two types of intelligence, modern psychologists have found—"social" and "abstract." The abstract intelligence is rather aloof. Regard it as disembodied. The social intelligence is characterized by a liking for people. Of course, in these there are variations. Either type may predominate. Some people are "half

and half." It is worth while to grade your salesmen, and for salesmen to judge prospects as to social and abstract intelligence.

Now in addition to the master sales record, for purposes of salesmen-control, other forms are necessary. In order to keep the master record up to date, what transpires at every call should be entered. Therefore the salesman must supply this information. This is done through written reports.

Such reports should be made on a standard form. The form should be designed so as to make it easy for the salesman to fill out, to save his time. Here is one style adopted by many organizations, which has been found satisfactory by both salesmen and sales-control managers:

Date.....

Company.....

Address.....

Person interviewed..... Title.....

Check the following:

Initial call ☐ Follow-up ☐ Service call ☐

Call again on or about.....

Comments	Small quantities	Large quantities	Interested in	Quoted	Write about	Sold	Put on Mailing List
Combination Runs							
Broadsides							
Booklets							
Catalogues							
Displays							
Dealers' Helps							
Envelope Enclosures							
Folders							
Mailing Pieces							
Now interested in job above							

Salesman.....

Your Money Back

guaranteed by

**Scientific Litho.
Products Co.**

Philadelphia

if these items do not measure up to all claims. Try them—enjoy advantages that other plants have had for years!

S. L. P. C. OPAQUE

Gives greater margin of convenience and safety. Sharp lines can be drawn with needle through this opaque without ragged result. Very useful to camera man in reducing dots in certain areas; when desired etching has been obtained, opaque washes off easily. To make 8 oz. of smooth concentrated opaque that will not pile, crack, or rub off with friction—

Try a 2 oz. jar—\$1.00

KEEN PLATE DEVELOPING INK

Re-acts favorably under weather variations—is humidity controlled. Super acid resisting power, costly oils, and uniform standards of manufacture assure sharply developed images from finest designs, without scum or tint. . . Will not crystalize on image. No asphaltum washout needed. . . Can be stored for future use without danger of a hardened image.

Try a Gallon—\$8.00

Distributed solely by

THE INTERNATIONAL PRINTING INK CORP.

Through All Its Branches In Principal Cities

The form given is not one recommended, for every photo-offset house will find it advantageous to devise its own. The form, however, is a specimen of how to go about the designing of one. Much information is conveyed merely by means of a check mark in box or proper column.

There are some salesmen who keep records at home or in the office. To satisfy these, the form can be supplied padded with sheets of pencil carbon to permit making a duplicate copy.

The master sales record file should be of the loose-leaf, detachable, visible index type. There are a number of splendid systems on the market, which should be investigated. There are, too, automatic sorting and tabulating systems but these are too costly and hardly required for the local operations of a photo-offset house.

In addition to allowing practical control of salesmen, the proper sales records enable the photo-offset house to concentrate more on desirable customers and prospects.

How many active accounts are now on your books? Suppose that half the number were concentrated upon, and by so doing you secured three times the present volume of sales. This would be worth while. In fact, you might do with one-fifth the number of active accounts were they the right sort. You undoubtedly could render better service, give better satisfaction.

A word to salesmen: Intelligent direction should be welcomed. There is, of course, a world of difference between "red tape" and scientifically designed forms. Note, too, in the

form given in this article, the salesman designates the time for a return call. If reminded of this by the office, that much detail is taken off your hands.

A general must first be a good soldier. When your commanding officers know what they are about, the training received at their hands enables you to be your own general later. Have confidence in your sales manager or your boss.

Ten Leadership Principles

The following ten principles of good leadership for sales managers were presented by Richard C. Borden, well-known inspirer of salesmen, at a symposium of the Sales Executive Club of New York recently:

1. Don't make 'em do things; make 'em *want* to do things.
2. Take a sincere personal interest in your men.
3. Show interest in each man's work by an accurate knowledge of each man's record.
4. Give *deserved* praise.
5. When you must criticize, criticize constructively and encouragingly.
6. Don't issue orders; issue requests.
7. Be like an elephant—never forget. Check on promised performances.
8. In giving field training, don't show 'em up—show 'em how.
9. When you issue sales "aids," remember that each salesman is a human being, not a horse. (Referring to those companies who load down their men with sample kits, portfolios, etc.)
10. Cultivate relations with your salesmen as carefully as you cultivate your customer relations or your public relations.

McCandlish Winners

Winners of the "McCandlish Awards for 1938," poster sketch contest, have been announced by A. R. McCandlish, President of McCandlish Lithograph Corporation of Philadelphia.

First prize, \$1,000.00, went to Joseph Binder of New York City; Second Prize, \$250.00, went to Reeve Limeburner also of New York City, and Third Prize, \$100.00, went to Robert Pettinato of Philadelphia.

The "McCandlish Awards for 1938" were given for the best poster design advertising products or services which were on the Outdoor Poster Panels during 1937.

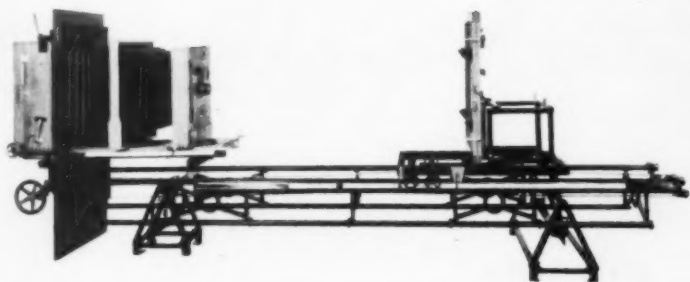
More than 700 sketches were submitted in the contest.

Lawson Educates with Advertising

Too much advertising consists of questionable generalities, such as "the best in the world," "of unexcelled quality," etc. Rarely does such advertising carry conviction, even if true.

A refreshing piece of advertising departing from this typical style, used frequently by many trade advertisers, has been issued by E. P. Lawson Co., Inc., New York, who handle Seybold and other makes of paper cutters and bookbinders' machinery.

The Lawson folder contains helpful information, both text and illustrations, telling how to maintain the efficiency of paper cutters when used for the cutting of various kinds of stock. It describes correct bevells and the best kinds of sticks to result in the utmost efficiency.



Levy "C" Precision Semi-Metal Camera, Dark Room Type

For Faithful REPRODUCTION!

LEVY CAMERAS

Standard and Dark Room Types—Made of Wood or Metal

LEVY } VACUUM PRINTING FRAMES
HALFTONE SCREENS
LENSES LAMPS

MANUFACTURED BY

REPRO-ART MACHINERY CO.

WAYNE AVE. & BERKELEY STREET PHILADELPHIA, PA.

• EQUIPMENT AND MATERIALS *Review* •

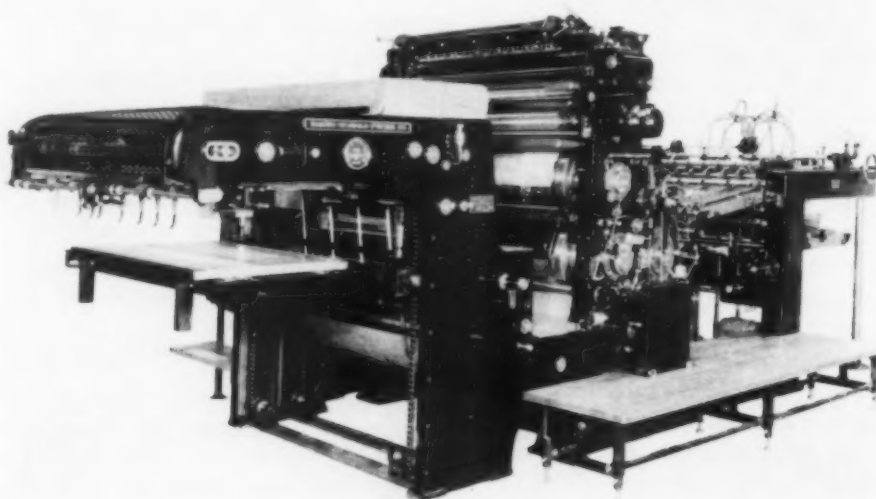
Contributions for this section are welcomed from manufacturers who have established unquestionable proof of the contribution of their product in improving efficient operation of photo-lithographic plants, preferably through actual use in a number of plants.

"Mirac" Plate Base Solution Now Being Marketed

The Fuchs & Lang Mfg. Co., division of General Printing Ink Corporation, has placed on the market a desensitizing solution for zinc or aluminum plates that is very simple to apply. By simply covering an unetched photo or hand transfer with this solution in the same manner used in gumming up a plate, desensitizing is so complete that it is almost impossible to make any scum or grease adhere to those parts.

The practical and severe tests which have been carried on over a long period have established this solution as the most perfect desensitizing agent yet developed, far superior to any of the etches heretofore used, according to the manufacturers.

The solution will not attack or corrode the finest work. It will make plates print sharper, with considerably less water. It will keep scum out, and at the same time materially increase the running life of the plate, provided that the fountain solution which is marketed in conjunction with the plate base solution, is used. It is economical, simple to use, and practically fool-proof.



H-S-P Line Now Complete with Addition of Two Presses

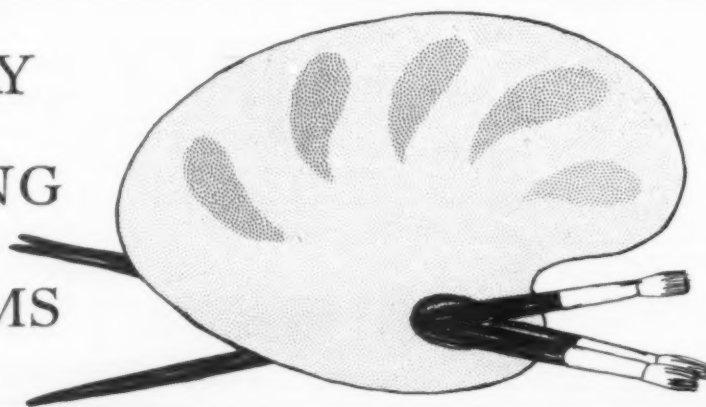
With the completion of the new Harris LSS—35 x 45" Single Color offset Press and the Harris LSQ—26 x 40" Single Color Offset Press, the entire line of eight sizes of Harris offset presses to cover the requirements of the offset market is made available.

Although these two new presses are now made only in single color, it is planned to build them in two

color models. In general their engineering and design follows the improvements made in the larger Harris press sizes. Features include the Harris HTB Stream Feeder, precision tapered pre-loaded roller bearings on main drive and all cylinder journals, and optional rotary three point or feed roll registering mechanism.

These new presses are best described as all purpose machines that support the skill of the pressman—high speed equipment designed to meet modern demands.

BEN DAY
SHADING
MEDIUMS



BEN DAY, INC.

118 EAST 28TH STREET
NEW YORK

"Where-to-Buy-It"

This Handy Reference Department is a regular monthly feature of THE PHOTO-LITHOGRAPHER. It is an accurate guide to reliable firms.

Listings are carried at the rate of One Dollar Per Line per Month or Ten Dollars a Year Payable in Advance.

ACCOUNTANTS

KROMBERG, J., & ASSOCIATES, C. P. A.'s, 461 Eighth Ave., New York, N. Y.
LEVESS, HERBERT H., C. P. A., 360 W. 23rd St., New York, N. Y.
REINISH, SAMUEL S., C. P. A., 2 Lafayette St., New York, N. Y.

ACIDS

CALIFORNIA INK CO., INC., 545 Sansome St., San Francisco, Calif.
MALLINKROCKDT CHEMICAL WORKS, 3600 N. Second St., St. Louis, Mo., and 72-74 Gold St., New York, N. Y.
PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.

ADDRESSING AND MAILING SERVICES

ARDLEE SERVICE, INC., 28 W. 23rd St., New York, N. Y.
GRAY LETTER SHOP, JAMES, 216 E. 45th St., New York, N. Y.

AIR CONDITIONING EQUIPMENT

OFFEN, B., & Co., 608 S. Dearborn St., Chicago, Ill.

ALUMINUM PLATES

(See Plates-Aluminum-Zinc)

ALBUMEN

CALIFORNIA INK CO., INC., 545 Sansome St., San Francisco, Calif.
HOLLAND, THOR, 7048 Jones Ave., N. W., Seattle, Wash.
HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.
INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
MALLINKROCKDT CHEMICAL WORKS, 3600 N. Second St., St. Louis, Mo. and 72-74 Gold St., New York, N. Y.
NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.
PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

AMMONIUM DICHROMATE

MALLINKROCKDT CHEMICAL WORKS, 3600 N. Second St., St. Louis, Mo., and 72-74 Gold St., New York, N. Y.

ARC LAMPS (See Lamps—Arc)

ASPHALTUM

HILO VARNISH CORP., 42-60 Stewart Ave., Brooklyn, N. Y.

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

ARTISTS' SQUARES

ZOLTAN, JOHN M., 833 Lyman Ave., Oak Park, Ill.

ARTISTS' SUPPLIES

PEERLESS BLUE PRINT CO., THE, 347 Fifth Ave., New York, N. Y.

BELLOWS

UNITED CAMERA CO., INC., 1515 Belmont Ave., Chicago, Ill.

BINDINGS

PLASTIC — BREWER - CANTELMO CO., INC., 118 E. 27th St., New York, N. Y.
WIRE-O—TRUSSEL MFG. CO., Poughkeepsie, N. Y. (See list of licensees in display advertisement)

BLANKETS

BAINBRIDGE, PHILIP M. (Goodrich Rubber Blankets), 95 Madison Ave., New York, N. Y.
CALIFORNIA INK CO., INC., 545 Sansome St., San Francisco, Calif.
IDEAL ROLLER & MFG. CO., 2512 W. 24th St., Chicago, Ill., and 21-24 39th Ave., Long Island City, N. Y.
INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
RAPID ROLLER CO., Federal at 26th, Chicago, Ill.
ROBERTS & PORTER, INC., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
SINCLAIR & CARROLL CO., INC., 591 11th Ave., New York, N. Y.
SINCLAIR & VALENTINE CO., 11 St. Clair Pl., New York, N. Y.
VULCAN PROOFING CO., 58th St. and First Ave., Brooklyn, N. Y.

BRONZERS

CHRISTENSEN MACHINE CO., Racine, Wis.
HENSCHEL MFG. CO., Milwaukee, Wis.

CAMERA CONTROLS

DOUTHITT CORP., THE, 650 W. Baltimore Ave., Detroit, Mich.

CAMERAS

AGFA-ANSCO CORP., Binghamton, N. Y.
CALIFORNIA INK CO., INC., THE, 545 Sansome St., San Francisco, Calif.

EASTMAN KODAK CO., Rochester, N. Y.
LANSTON MONOTYPE MACHINE CO., 24th at Locust, Philadelphia, Pa.
LEVY, MAX, & Co., Wayne & Berkley Sts., Philadelphia, Pa.
LITHO EQUIPMENT & SUPPLY CO., 215 W. Ohio St., Chicago, Ill.
MILES MACHINERY CO., 18 E. 16th St., New York, N. Y.
NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.
OSTRANDER-SEYMOUR CO., THE, 1870 S. 54th Ave., Cicero Sta., Chicago, Ill.
PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
REPRO-ART MACHINERY CO., Wayne Ave. & Berkley St., Phila., Pa.
ROBERTSON, R. R., 400 W. Madison St., Chicago, Ill.
RUTHERFORD MCHY. CO., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
SULLEBARGER, E. T., Co., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.
WESEL MFG. CO., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.
ZEISS, CARL, INC., 485 Fifth Ave., New York, N. Y.

CARDBOARDS AND BRISTOLS

MEAD SALES CO., THE, 230 Park Ave., New York, N. Y.
WHEELWRIGHT PAPERS, INC., 230 Park Ave., New York, N. Y.

CARBON (ARC LAMP)

PEASE CO., C. F., THE, 2601 W. Irving Park Road, Chicago, Ill.

CARBON PAPER RIBBONS

REMINGTON RAND, Buffalo, N. Y.

CARBONS

NATIONAL CARBON CO., Cleveland, O.

CARBONS—Photographic

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.
NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.
SULLEBARGER, E. T., Co., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.

CHEMICALS

AGFA-ANSCO CORP., Binghamton, N. Y.
CALIFORNIA INK CO., INC., THE, 545 Sansome St., San Francisco, Calif.

DEFENDER PHOTO SUPPLY Co., Rochester, N. Y.

DOM, G. C., SUPPLY Co., Cincinnati, O.

EASTMAN KODAK Co., Rochester, N. Y.

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.

LA MOTTE CHEMICALS PRODUCTS Co., 438 Light St., Baltimore, Md.

MALLINKROCKDT CHEMICAL WORKS, 3600 N. Second St., St. Louis, Mo., and 72-74 Gold St., New York, N. Y.

MERCK & Co., Inc., Rahway, N. J.

NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.

PHILLIPS & JACOBS, 622 Race St., Phila., Pa.

PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

SIEBOLD, J. H. & G. B., Inc., 47 Watts St., New York, N. Y.

COLOR CONTROL AND MEASURING EQUIPMENT

HUEBNER LABORATORIES, 202 E. 44th St., New York, N. Y.

COMPOSITION

LITHART TYPOGRAPHIC SERVICE, 228 E. 45th St., New York, N. Y.

MONSEN, THORMOD, AND SON, INC., 740 N. Franklin St., Chicago, Ill.

COMPOSING MACHINES

COXHEAD, RALPH C., CORP., 17 Park Place, New York, N. Y.

CRAYONS-Litho

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.

KORN, WM., INC., 260 West St., New York, N. Y.

ROBERTS & PORTER, INC., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

DAMPENING DEVICES

GOODRICH, B. F., Co., THE, Akron, O.

INTERNATIONAL PRESS CLEANER & MFG. Co., THE, 112 E. Hamilton Ave., Cleveland, O.

WAGNER, CHARLES, LITHO MCHY. Co., 51 Park Ave., Hoboken, N. J.

DAMPENING ROLLER COVERS

GODFREY ROLLER COMPANY, 211 N. Camac St., Phila., Pa.

DEEP ETCH SUPPLIES

PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.

SCHULTZ, H. J., 2230 N. Racine Ave., Chicago, Ill.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

DICHROMATE—Ammonium Photo Granular

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.

DIE-CUTTING MACHINE—Semi-Automatic

KRAUSE, KARL, U. S. Corp., 55 Vandam St., New York, N. Y.

DRYERS

CARTER, C. W. H., 100 Varick St., New York, N. Y.

HILO VARNISH CORP., 42-60 Stewart Ave., Brooklyn, N. Y.

SINCLAIR & VALENTINE Co., 11 St. Clair Pl., New York, N. Y.

DRYERS—Photo Print

SIMPLEX SPECIALTY Co., INC., 206 E. 33rd St., New York, N. Y.

DRYING OVENS

ZARKIN MACHINE Co., INC., 335 E. 27th St., New York, N. Y.

DYNAMOS—MOTORS—PRESS DRIVES AND ELECTRICAL CONTROL EQUIPMENT

AMERICAN TYPE FOUNDERS SALES CORP., 200 Elmora Ave., Elizabeth, N. J.

CLINE-WESTINGHOUSE, Chicago, Ill.

CUTLER-HAMMER MFG. Co., 315 N. 12th Ave., Milwaukee, Wis.

GENERAL ELECTRIC Co., Schenectady, N. Y.

KIMBLE ELECTRIC Co., W. 14th St. & S. Damen Ave., Chicago, Ill.

NORTHWESTERN ELECTRIC Co., 408 S. Hoyle St., Chicago, Ill.

ROBBINS & MEYERS, INC., Springfield, Mo.

WESTINGHOUSE ELECTRICAL & MFG. Co., E. Pittsburgh, Pa.

ENVELOPES

DAYTON ENVELOPE Co., Dayton, O.

STERLING TAG Co., 1600 E. 30th St., Cleveland, O.

ETCHES

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

FADE-O-METER

ATLAS ELECTRIC DEVICES Co., 361 W. Superior St., Chicago, Ill.

FILMS

AGFA ANSCO CORP., Binghamton, N. Y.

CALIFORNIA INK Co., INC., THE, 545 Sansome St., San Francisco, Calif.

EASTMAN KODAK Co., Rochester, N. Y.

GEVAERT Co. OF AMERICA, INC., THE, 423 W. 55th St., New York, N. Y.

HALOID Co., THE, 6 Haloid St., Rochester, N. Y.

HAMMER DRY PLATE & FILM Co., Ohio Ave. & Miami St., St. Louis, Mo.

NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.

FLANNEL

FUCHS & LANG MFG. Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.

GEVAERT Co. OF AMERICA, INC., THE, 423 W. 55th St., New York, N. Y.

INTERNATIONAL PRINTING INK CORP. THE, 636 11th Ave., New York, N. Y.

ROBERTS & PORTER, INC., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

FOLDING MACHINERY

BAUM, RUSSELL ERNEST, 615 Chestnut St., Phila., Pa.

DEXTER FOLDER Co., 28 W. 23rd St., New York, N. Y.

GLYCERINE

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.

PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.

GRAINING FLINT

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.

NEW ENGLAND QUARTZ Co. OF NEW YORK, 450 7th Ave., New York, N. Y.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

GRAINING AND REGRAINING—Zinc, Aluminum, Glass and Multilith Plates

CHICAGO LITHO PLATE GRAINING Co., 214-16 N. Clinton St., Chicago, Ill.

ILLINOIS PLATE GRAINING Co., INC., 913-921 W. Van Buren St., Chicago, Ill.

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.

LITHOGRAPHIC PLATE GRAINING Co. OF AMERICA, INC., 41 Box St., Brooklyn, N. Y.

MADDOX LITHOPLATE GRAINING CORP., 503 S. Jefferson St., Chicago, Ill.

McKENNA, JAMES J., 1015 Callowhill St., Phila., Pa.

NATIONAL OFFSET SUPPLY Co., 613 N. Broadway, St. Louis, Mo.

PHOTO-LITHO PLATE GRAINING Co., INC., 1207 S. Highland St., Baltimore, Md.

RELIABLE LITHOGRAPHIC PLATE Co. INC., 17 Vandewater St., New York, N. Y.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

WESTERN LITHO PLATE & SUPPLY Co., 1019 Souard St., St. Louis, Mo.

GRAINING MACHINES

FRITSCH, R., 145 Hudson St., New York, N. Y.
HOE, R., & Co., Inc., 910 E. 138th St., at East River, New York, N. Y.
McKINLEY LITHO SUPPLY Co., 1600 John St., Cincinnati, O.
ZARKIN MACHINE Co., 335 E. 27th St., New York, N. Y.

GRAINING QUARTZ FLINT

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
NEW ENGLAND QUARTZ Co. OF NEW YORK, 450 Seventh Ave., New York, N. Y.

GUM ARABIC

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.
INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

HAND ROLLERS

ROBERTS & PORTER, INC., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.
SIEBOLD, J. H. & G. B., INC., 47 Watts St., New York, N. Y.

HUMIDIFICATION

CARRIER ENGINEERING Co., Syracuse, N. Y.
SOUTHWORTH MACHINE Co., 30 Warren Ave., Portland, Me.

HYDROQUINONE

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.
MALLINKROCKDT CHEMICAL WORKS, 3600 N. Second St., St. Louis, Mo., and 72-74 Gold St., New York, N. Y.
NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.
SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

INK COMPOUNDS

INDIANA CHEMICAL & MFG. Co., Indianapolis, Ind.; New York City, N. Y., and Chicago, Ill.

INKS

ACHESON INK Co., INC., 142 Skillen St., Buffalo, N. Y.
ACME PRINTING INK Co., 1315 W. Congress St., Chicago, Ill.
AMERICAN PRINTING INK Co., Div. General Printing Ink Corp., 2314 W. Kinzie St., Chicago, Ill.

AUGUST, CHARLES, CORP., THE, 416 Orleans St., Chicago, Ill.

BLACKER, H., PRINTING INKS, INC., 304 Lock St., Cincinnati, O.

BOWERS PRINTING INK Co., 711 W. Lake St., Chicago, Ill.

BRADEN-SUTPHIN INK Co., 3700 Chester Ave., Cleveland, O.

CALIFORNIA INK Co., 545 Sansome St., San Francisco, Calif.

CEB PRINTING INK Co., 817 Washington Blvd., Chicago, Ill.

CRESCENT INK & COLOR Co. OF PENNA., THE, 464 N. 5th St., Phila., Pa.

DRISCOLL, MARTIN, & Co., 610 Federal St., Chicago, Ill.

FLINT, HOWARD, INK Co., 2545 Scotten Ave., Detroit, Mich.

FUCHS & LANG MFG. Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.

GAETJENS, BERGER & WIRTH, INC., 35 York St., Brooklyn, N. Y., and 538 S. Clark St., Chicago, Ill.

HERRICK, WM. C., INK Co., INC., 325 W. 34th St., New York, N. Y.

HILL-HENTSCHEL Co., 3928 Clayton Ave., St. Louis, Mo.

HUBER, J. M., INC., 460 W. 34th St., New York, N. Y.

INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.
JOHNSON, CHARLES ENEU, & Co., INC., 10th & Lombard Sts., Phila., Pa.

KOHL & MADDEN PRINTING INK Co., 731 Plymouth Court, Chicago, Ill.

LEVEY, FREDERICK H., Co., INC., 1223 Washington Ave., Phila., Pa.

MAYER, ROBERT, Co., INC., 1107 Grand St., Hoboken, N. J.

PRESCOTT, H. S., 238 Dwight St., Springfield, Mass.

ROBERTS, LEWIS, INC., 72 Union St., Newark, N. J.

ROOSEN, H. D., Co., Ft. 20th-21st St., Brooklyn, N. Y.

SCHWARM & JACOBUS Co., THE, 1216 Jackson St., Cincinnati, O.

SENEFELDER COMPANY, INC., THE, 32-34 Greene St., New York, N. Y.

SIEBOLD, J. H. & G. B., INC., 47 Watts St., New York, N. Y.

SINCLAIR & CARROLL Co., INC., 591 11th Ave., New York, N. Y.

SINCLAIR & VALENTINE Co., INC., 11-21 St. Clair Pl., New York, N. Y.

SLEIGHT METALLIC INK COMPANIES, INC., 538 N. Third St., Phila., Pa.

SUPERIOR PRINTING INK Co., INC., 295 Lafayette St., New York, N. Y.

TRIANGLE INK & COLOR Co., INC., 26 Front St., Brooklyn, N. Y. (also Boston, Mass., Baltimore, Md., and St. Louis, Mo.).

WILLIAMS, R. S., Co., INC., 257 W. 17th St., New York, N. Y.

WINSLOW INK CORP., 124-132 White St., New York, N. Y.

INK WAX REDUCER (Smoothol Ink Wax)

SMITH, FRANCIS X., Co., 952 E. 93rd St., Brooklyn, N. Y.

INSURANCE—Workmen's Compensation

N. Y. PRINTERS & BOOKBINDERS MUTUAL INSURANCE Co., 147 Fourth Ave., New York, N. Y.

LAMPS, Arc

ATLAS ELECTRIC DEVICES Co., INC., 361 W. Superior St., Chicago, Ill.
BEATTIE'S HOLLYWOOD HI-LITE Co., 1560 N. Vine St., Hollywood, Calif.
GELB, JOSEPH, MFG. Co., 250 W. 54th St., New York, N. Y.
MACBETH ARC LAMP Co., 875 N. 28th St., Phila., Pa.
PEASE, C. F., Co., THE, 2601 W. Irving Park Road, Chicago, Ill.
SULLEBARGER, E. T., Co., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.

LENSES

BAUSCH & LOMB OPTICAL Co., Rochester, N. Y.
GOERZ, C. P., AMERICAN OPTICAL Co., 317 E. 34th St., New York, N. Y.
NORMAN-WILLETS Co., 318 W. Washington St., Chicago, Ill.
PITMAN, HAROLD M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
SULLEBARGER, E. T., Co., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.
ZEISS, CARL, INC., 485 Fifth Ave., New York, N. Y.

LINE-UP AND REGISTER MACHINES, SYSTEMS AND TABLES

CRAFTSMEN LINE-UP TABLE CORP., 49 River St., Waltham, Mass.
DOUTHITT CORP., THE, 650 W. Baltimore Ave., Detroit, Mich.
HAMILTON MFG. Co., INC., Two Rivers, Wis.
LANSTON MONOTYPE MACHINE Co., 24th at Locust, Phila., Pa.
MILES MACHINERY Co., 18 E. 16th St., New York, N. Y.
ROBERTSON, R. R., 400 W. Madison St., Chicago, Ill.
WESEL MFG. Co., 468 Fourth Ave., New York, N. Y. and Scranton, Pa.

LITHO DEVELOPING INK

HUNT, PHILIP A., Co., 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, O.—1076 W. Division St., Chicago, Ill.—111 Binney St., Cambridge, Mass.
INTERNATIONAL PRINTING INK CORP., THE, 636 11th Ave., New York, N. Y.

LITHO ENGRAVING AND DRAWINGS

LITHO TRADE SERVICE STUDIO, 538 S. Clark St., Chicago, Ill.

LITHOGRAPHIC EQUIPMENT DISTRIBUTORS

HEUSLEIN, R. J., Co., 11 S. Meridian St., Indianapolis, Ind.

MACHINISTS

GEIGHEIMER, WM., INC., 78 Roeb-
ling St., Brooklyn, N. Y.
RATHBUN & BIRD CO., INC., 85 Grand
St., New York, N. Y.

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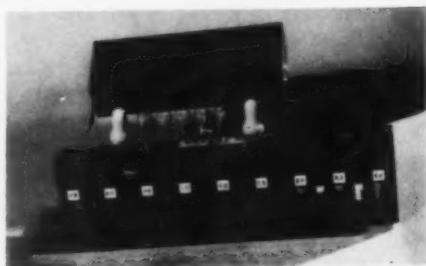
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Photography and Color Correction

Line and Half-Tone Negatives. T. S. Hiller. *The Photo-Lithographer*, 6, No. 1, Jan. 1938, pp. 42-3; No. 2, Feb. 1938, p. 26. The necessary attributes of photo-offset line and half-tone negatives are listed and discussed. Three theories of screen action have been put forth by (1) Ives, (2) Levy, and others, including Fruwirth, and (3) Dolland and Tallent, and later by Deville. Fruwirth's work, edited by Mertle, on the diffraction theory of half-tone, represents the most thorough exposition, and is discussed briefly.

Blue Prints on Glass as Aid in Map and Color Work. L. R. Meloy. *The Photo-Lithographer*, 6, No. 1, Jan. 1938, p. 57. Blue prints on glass can be used to advantage in the reproduction of maps where the colors of the highways must be different and yet register very closely, in greeting card manufacture, in the "fake" color process, and in a number of other types of work. The method requires only one photographic negative, which is used to print as many blue print positives as there are colors required for the job. A description of the process is given.

Square Stop: Diaphragm Control Produces Round Dots in Half-Tone Plates. Anonymous. *Printing Equipment Engineer*, 55, No. 4, Jan. 1938, p. 26. A new type of square-stop diaphragm control, synchronized with the Douthitt System for attachment to photo-engraving cameras is described. This method yields round dot structure in half-tone plates and a half-tone negative with round dots in the highlights. Larger round highlight dots can be obtained without being connected, than with the usual stops. The square stop diaphragm is described briefly.

Modern Tendencies in Photography: The Versatility of the Miniature Camera. W. G. Briggs. *British and Colonial Printer and Stationer*, 122, No. 484, Jan. 27, 1938, pp. 90-2. The author discusses the importance of the development of miniature cameras and of modern films with their extreme color-sensitivity, speed, and fine grain. The color processes mentioned include Agfacolor, Kodachrome, Vivex, and Dufaycolor, and their advantages and disadvantages are given in detail. The author states his opinion that, in the near

future, color negatives will be taken, and finished prints produced by the Eastman Wash-off Relief process the same day.

Photo Type Composition. R. B. Fishenden. *Modern Lithographer and Offset Printer*, 34, No. 1, Jan. 1938, pp. 1-2. The installation and use of a complete Uhertype equipment at the Dunstable plant of Waterlow & Sons, Ltd., is described. Three units are comprised, the first of which composes type characters letter by letter on a roll film which is developed yielding an unjustified negative. The second unit justifies the lines of type matter by photographing the words separately, spaced so as to give lines of equal length, on a film. After developing, the correction and interline spacing is carried out on the same unit. The third unit is the Metteur, or composing machine for make-up, essentially a step-and-repeat machine with many refinements and additions. On this unit negatives or positives of type matter and designs can be re-photographed to any required size, type can be set in any position, and all-over patterns can be produced easily.

Kodachrome Enlargements for Color Separation Negatives. M. Leeden. *Modern Lithographer and Offset Printer*, 33, No. 12, Dec. 1937, pp. 253-4. When enlarging from Kodachrome film, the use of a diffuser with the arc lamp is advisable, even though exposure time is lengthened, since direct light magnifies any blemishes present in the film positive. The diffuser, which should be the finest ground glass available, should be placed as far back toward the condenser as possible. Another reason for using the diffuser is that the condenser is not color-corrected, and, if used alone, would produce misregister in the enlarged images. To cut down exposure time, banks of gas filled lamps can be used.

Moire Pattern Can Be Avoided by Ilford New Device. Anonymous. *Modern Lithographer and Offset Printer*, 33, No. 12, Dec. 1937, p. 254. The "Ilford Screen Direction Indicator" is a small device useful in eliminating moire pattern. It consists of a series of semicircles printed on a card, and is placed beside the copy and photographed at the same time through the half-tone screen. For succeeding colors the screen is so set that the interference pattern is moved around accurately to 30 degrees. The interference patterns are recorded on the negatives, giving the operator a permanent check.

The Agfa Reversal Process for Reprolith Films. V. H. Reckmeyer. *The Photo-Lithographer*, 6, No. 2, Feb. 1938, pp. 36, 38. The methods of producing a film positive from a positive, or a negative from a negative original, using the Reprolith films, are described. Directions for (1) exposure, (2) first development, (3) reversal and cleaning, (4) second exposure and re-development, and (5) fixing, washing, and drying, are given.

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"Expositron": The Last Word in Exposure Control. W. B. Hislop. *Process Engraver's Monthly*, 45, No. 529, Jan. 1938, pp. 17-9. The "Expositron" meter for absolute control of exposure is described in detail. This device measures with great accuracy the light actually reflected from the original, as the camera sees it, and measures separately the amount of light reflected from the shadows, highlights, or any intermediate tone. No matter how the light may fluctuate in making an exposure, the "Expositron" measures it in arbitrary units, and when the correct exposure has once been determined, all succeeding exposures may be interrupted at the same total number of units, yielding negatives of uniform density.

Planographic Printing Surfaces and Plate Preparation

Deep-Etched Plates. W. N. Misuraca. *National Lithographer*, 45, No. 1, Jan. 1938, pp. 32, 34. The history of deep-etched plate making processes is reviewed briefly, and the use of modern deep-etched plates in metal decorating is described. The speed of the coating solution should not be too high, since very short exposures tend to produce conditions which shorten the life of the plate. Uniform and thorough development is necessary. A number of other suggestions are given.

Light Sensitive Coatings for Lithography. W. H. Wood. *National Lithographer*, 45, No. 1, Jan. 1938, pp. 30, 66. Materials available for making lithographic plate coatings are discussed under the headings of (1) water-insoluble coatings such as Syrian asphaltum and certain synthetic resins, and (2) water-soluble coatings such as albumen, glue, gelatin, casein, gums, natural resins, cellulose, and polyhydroxy compounds. The last group includes polyvinyl alcohol and the esters and ethers of this substance developed by the Harris-Seybold-Potter Company as plate making materials.

The Lithographic Image: Some Methods of Its Production. A. H. Reiser. *Lithographers' Journal*, 22, No. 10, Jan. 1938, pp. 433, 449, 454; No. 11, Feb. 1938, pp. 478-9. The methods by which lithographic press plates may be prepared are discussed, using a novel graphic form of representation. The methods and their advantages are treated in the following order: (1) hand-drawn art work, (2) hand or machine transferring, (3) albumen process, (4) intaglio, (5) relief image or high-etch. The chief advantage of the intaglio process is the wear-resistance of the plates so produced. The relief litho plate is used in connection with dry printing and is of value chiefly in the production of checks and revenue stamps.

Equipment and Materials

Dual Purpose Distributing System for Rotary Offset and Lithographic Presses. John G. Goedike. U. S. Patent No. 2,110,216 (March 8, 1938). The method of simultaneously inking and dampening printing surfaces of rotary offset and lithographic printing members,

which consists in feeding water in the form of drops from a source of supply to a distributing system, transmitting the water together with a film of ink to a printing surface through said distributing system, whereby an ink repellent coating of water will be applied to the non-design portions of the printing surface, and ink will be applied to the design portions of said surface.

1937 Trends in Machines. "Inker." *Modern Lithographer and Offset Printer*, 33, No. 12, Dec. 1937, pp. 251-2. The author discusses briefly the newer improvements in equipment, which include the following: (1) high speed rotary presses, (2) the use of ball bearings for inking and dampening rollers, preloaded taper roller bearings, the swinging arm feed, adjustable spring grippers, suction devices in the delivery for steadying sheets when delivering at higher speeds, (3) offset proofing press advances such as self-inking and self-dampening units for motor driven presses for proofs in color and for short runs.

The Wale Rotary Press. W. B. Hislop. *Process Engravers' Monthly*, 44, No. 528, Dec. 1937, pp. 417, 420. This small and very rapid relief printing press uses a thin plate of copper twelve thousandths of an inch thick, the non-image portions being etched to a depth of five thousandths of an inch.

Synthetic Roller Technique. J. C. Dunn. *Printing Equipment Engineer*, 55, No. 1, Oct. 1937, p. 30. Synthetic rubber rollers are highly resistant to oxidation, oils, solvents, driers, and temperature and humidity changes, but proper setting, use, and washing are required if these rollers are to show their full value and economy. Methods of washing and reconditioning such rollers are described briefly.

Paper and Ink

Requirements in Paper for Lithographing. T. A. Pascoe. *The Photo-Lithographer*, 6, No. 1, Jan. 1938, pp. 23, 45. The finish, bulk, sizing, moisture content, and hardness desirable in offset papers, and the avoidance of papers likely to produce excessive fuzz or to corrode the plate, are discussed.

Paper Fluffing Can Be Avoided. O. Fister. *Modern Lithographer and Offset Printer*, 33, No. 12, Dec. 1937, p. 262. Precautions to avoid fluffing of paper are the use of sharp knives in cutting and trimming paper, and the use of strong blasts of air to remove fluff while cutting. Examination of new deliveries of paper in strong light falling almost parallel with the sheet will detect abnormal tendency to fluff. "Fluffless" papers are made on a double web, the two undersides being felted together to form a single web. Even these types of paper require the use of keen knives in cutting.

Printing Speed, Printing Ink, and Printing Paper. J. Bekk. *Zellstoff und Papier*, 17, No. 7, July 1937, pp. 294-8. Danger of picking is not always greatest when ink absorption is low, but is greater the thinner the ink film,

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the closer the union of the ink film with the paper, and the greater the adhesion of the ink. High printing speeds demand inks with minimum adhesion and papers with high resistance to picking. The tendencies of free inking and rough papers to produce picking are explained. (*Patra Journal*, 1, No. 2, Sept. 1937, pp. 58-9.)

Paper Making: What Should the Ink Maker Know About it? J. G. Patrick. *American Ink Maker*, 16, No. 2, Feb. 1938, pp. 18-21, 25; No. 3, Mar. 1938, pp. 27, 29, 31. The history of paper making and sources of raw materials for paper are outlined, and the ancient and modern processes of manufacture are described. Paper troubles encountered in printing, and their causes and remedies are discussed and tabulated. Photographs are included.

A Note on the Determination of the Density of Printing Ink. J. A. V. Fairbrother and R. G. W. Croney. *Patra Journal*, 1, No. 3, Nov. 1937, pp. 104-5. *American Ink Maker*, 16, No. 1, Jan. 1938, p. 18. A rapid method for determining the density of a printing ink is described. The method is accurate to within 2-3%.

The Use of Ultra-Violet Rays in Fluorescence Analysis (As Applied to Printing Inks). J. Grant. *Manufacturing Chemist*, 8, No. 12, Dec. 1937, pp. 387-92. *American Ink Maker*, 16, No. 1, Jan. 1938, pp. 19-21. This article emphasizes the value of fluorescence analysis and particularly of fluorescence microscopy in the testing and control of inks and related substances such as pigments, driers, oils, solvents, and resins. Ultra-violet light is used to produce the fluorescence. In the case of pigments, the purity or constancy of composition, particle size, and composition of mixtures of pigments in a suspension can be determined approximately, although there is reason to believe that fluorescence changes somewhat with particle size and with exposure to ultra-violet light. The mounting medium, if carefully chosen, will not mask the fluorescence of the pigment but may even emphasize this property or its absence. In the case of inks, penetrating power can be determined as by no other method. The original article is illustrated by cuts and photographs.

Cadmium. Anonymous. *American Ink Maker*, 16, No. 2, Feb. 1938, pp. 23-5. The production, properties,

and uses of cadmium pigments are discussed. These colors are particularly useful in the tin-printing process because of their resistance to fairly high temperatures, to light, and to acids, alkalies, and solvents.

General

Practical Suggestions for Operating the Lithographic Press. Anonymous. *The Photo-Lithographer*, 6, No. 2, Feb. 1938, pp. 50, 52, 56, 58, 60. This article takes up in considerable detail the correct methods for placing the plate in the press and adjusting the pressure, putting on new blankets, setting the form rollers, gripper guides, side-guides, impression cylinder grippers, automatic feed devices, and delivery grippers, the maintenance of correct pressure between the blanket and impression cylinders, the setting and operation of the ink fountain and dampening rollers, and the general press operation.

The Lithographer's Year 1937 Brought Encouraging Results. R. B. Fishenden. *Modern Lithographer and Offset Printer*, 33, No. 12, Dec. 1937, pp. 249-51. *Lithographers' Journal*, 22, No. 11, Feb. 1938, pp. 474, 491. The progress made in lithography during 1937 was made up of steady gains in many lines, including: dot-etching, mechanical means of dot control such as the Bassist and the Knudsen processes, exposure control devices such as the Expositron, color photography, web offset printing, photo-type composition, and research.

Miscellaneous

Composition, Printing, Binding, and Related Processes. (Book.) (Printed in German) O. Krüger. Published by A. Brockhaus, Leipzig, Germany, 1937; 144 pages; 3.40 RM. The principal printing methods and their operation are described in an elementary manner, and practical hints are given for the buyer of printing.

The Hassing Electro-Mechanical Engraving Machine. O. Hassing and J. O. Nielsen. *The Penrose Annual*, 40 (1938), pp. 108-11. The development of picture telegraphy is traced, and the design and operation of the Hassing electro-mechanical engraving machine is described. Photomicrographs, a diagram, and two examples of the work are shown.

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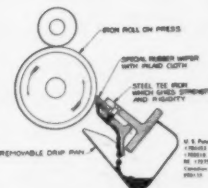
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(Continued from page 54)

get the minimum amount of moisture coincident with excellent printing. Done on the fly (while running) it is more than likely in 15 minutes time to have more than 1,000 spoiled sheets while running at the advertised top speed of the press.

To the credit of all concerned, this debate has culminated in a research by one of the press builders. New chemicals and improved methods are said to have resulted from this work. Reports have been seen on the pages of this publication of this research, although the products have not been marketed as yet.

Work has been conducted by other agencies to combat the so-called failings in presswork. A transferer of New York City has been using a counter-etch and plate etch for many years on zinc, which had the net result of cutting working hours. This is because of the long life of the hand-transferred press-plate he makes. Albumen or deep-etch plates also may be treated with these solutions.

Word reaches our ears of another worker who has perfected a solution which practically enamels the plate's surface. Neither soap, crayon, oelic, nor other drastic methods applied to the surface of the plate have any harmful effect. As a matter of actual fact, after the plate's surface has been acted upon by this man's solution, no reagent has been found, to this time, to enable counter-etching and the addition of work.

Then, too, there is also the current experiment with aluminum plates, wherein they are electrically coated around the work areas, the whole yielding another apparently indestructible plate which prints wonderfully well.

These improvements in the lithographic plate's surface have all had for their purpose the economy of time, motion, and higher quality of the lithographic product. All of this could well be considered an indirect contribution to the idea of the importance of the offset press. It demonstrates very clearly the psychological factor mentioned at the beginning of the article. Everything is subservient to the offset press.

The machine is not fool-proof. It

needs careful and painstaking effort to get the most out of it. Very often the difference between success and failure is a finely divided line. This is true of feeder regulation as well as inkers and dampers adjustment. In damper setting, new dampers should be installed dry, and adjusted to a three point sheet before they are wet down. It is ever so much more accurate, and far easier, to get the feel of the pull of the three point strip when the damper is dry than when adjusting a moist damper. Used, ink-caked dampers offer a resistance to water, and thus fail to dampen properly the surface of the press plate. Should the ductor roller be set too tightly against the brass roller, a squeegee action sets in which squeezes the water out of the damper at the point of contact. Brass rollers coated with ink should be washed with gasoline, dried, and gummed with the regular plate acid, and dried thoroughly with the acid on them. Scrubbing them with pumice powder will produce a number of fine scratches which act as ink catchers that cause the ink to adhere more rapidly each time they are pumiced.

How often has ghosting caused you trouble? This repetition of the work limits of the design on the tint or solids lying directly behind the design, is often caused by faulty form roller setting. If the form rollers are set to the plate so that a three point sheet can be pulled out evenly across the roller length with a tight pull, they should drop into the gap very lightly. Then the setting to the storage roller plays an important part, too. For it is this contact with the storage roller that supplies the fresh ink, and dissipates the moisture picked up from the press plate.

Streaks across plates are often caused by faulty roller setting. Two "crutches" are often employed, to get around these streaks. One is the famous "apron." In this, solid patches are placed around and outside work areas to act as ink slabs so that a minimum amount of moisture is picked up. Others use resin, varnish, venice turps, in their inks to dissipate the effect of faulty inkers action. Of course, these are all subterfuges. Sometimes, loose boxes in which

roller spindles wobble cause these streaks. Washers placed on the spindles very often eliminate any end play, and the streaks with them, should that be their cause.

Speed, too, may be a cause of these streaks. When one cylinder—either the plate or the blanket—runs so much faster than the other, there must be a slip or skid somewhere. When diameters are vastly different, and axial speeds are alike, one of the outer peripheries, running upon the other, must necessarily run faster to complete its revolution in the same time as its running mate. The streak then appears where the slip occurs.

Ink, too, plays an important part. It must be so constituted as to be able to overcome moisture. A thin, soupy ink with no body will not do that. Ink was to be used in the form in which it is compounded. Kerosene and cornstarch or magnesia, used with discretion, is often necessary, however, when printing to coated stock. When offset paper is used, varnish alone may be all that is necessary, with a judicious use of dryers. The dryers can be possibly the greatest single element of trouble in the pressroom. But to say no dryers is necessary, is as foolish as the story in a trade journal, of running an offset press without dope in the fountain. A judicious use of both is essential. Varnishes from No. 1 to No. 3 usually form a good starting point for the mixing of an offset ink.

The future of the offset press is a sort of three-way proposition, involving man, machine, and material. Some of these points in pressmanship have been expounded at trade talks and lectures to apprentice classes by Mr. John Hartman, expert offset pressman. Do you agree with the importance of this lithographic tool, the offset press, after reading this?

A Correction

The affiliation of Robert J. Butler, given in the March issue in connection with Mr. Butler's article, "New Developments in the Ink Industry," was incorrectly stated. It should have read: "Chemist, The Fuchs & Lang Mfg. Company, Division of General Printing Ink Corporation, New York."

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The Southworth Machine Co. of Portland, Maine, is the only concern licensed to manufacture and sell the patented Simplex Paper Conditioner Machine. The purchase and use of machine known and advertised as the Box-type Paper Conditioner is a direct infringement on U. S. letters patent No. 1,657,073. Any infringement of patent rights whether it be by the manufacturer or user of infringing apparatus will be restrained by court action.

E. F. Dreger, Patentee

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Going lithograph plant with Harris Offset Press Equipment for sale in Philadelphia. Reasonable terms to responsible party. Box M-12.

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Will consider plant in New York City with small size presses only. Must be in good condition. Plant with complete plate making equipment preferred. State full details, including size of presses, plant space, price wanted, in first letter. Box A-1, The Photo-Lithographer.

Milwaukee Bronzers
for all presses. Also some rebuilt units. Write
C. B. Henschel Mfg. Co., Milwaukee, Wisc.

ADVERTISING INDEX

April, 1938

Agfa Ansco Corp.....	10	Korn, William, Inc.....	79
Artists Supply Co.....	79	Latham, C. W.....	63
Baum, Russell Ernest.....	75	Leiman Bros.....	35
Agency: Renner Advertisers, Philadelphia, Pa.		Lithographic Plate Graining Co. *	
Bingham's, Sam'l, Sons Mfg. Co. 61		of America, Inc.....	52
Agency: The L. W. Ramsey Co., Chicago, Ill.			
California Ink Co., Inc., The....	75	Mallinckrodt Chemical Works... 57	
Carter, C. W. H.....	78	Agency: The Victoria Co., St. Louis, Mo.	
Chillicothe Paper Co.....	57	Meloy, L. R., Dr.....	75
Agency: Julian J. Behr Co., Cincinnati, O.		Merck & Co.....	11
Classified Advertising.....	81	Agency: Charles W. Hoyt & Co., Inc., New York, N. Y.	
Columbia Offset & Reproduction Corp.....	77	Mille, W. P.....	79
Coxhead, Ralph C., Corp.....	79	Newick Bros.....	59
Crescent Ink & Color Co. of Penna. 73		Norman-Willets Co.....	73
		Northwest Paper Co.....	7
		Agency: Frank I. Cosh, Chicago, Ill.	
Day, Ben, Inc.....	66	Okie, Francis G.....	62
Dayton Rubber Mfg. Co..3rd Cover		Pitman, Harold M., Co.....	39
Agency: Geyer, Cornell & Newell, Dayton, O.			
DeVilbiss Co., The.....	31	Rapid Roller Co.....	8
Agency: Meldrum & Fewsmith, Toledo, O.		Agency: Burton G. Feldman & Associates, Chicago, Ill.	
Dexter Folder Co.....	43	Reliable Lithographic Plate Co., Inc.....	55
Driscoll, Martin, Co.....	77	Repro-Art Machinery Co.....	65
		Roberts & Porter, Inc.....	3
Eastman Kodak Co.....	29		
Fototype.....	79	Scientific Litho Products Corp... 64	
Agency: Ross Llewellyn, Chicago, Ill.		Senefelder Co., Inc., The.....	4
Fuchs & Lang Mfg. Co., Div.		Senelith Ink Company, Inc., The.....	2nd Cover
General Printing Ink Corp.		Siebold, J. H. & G. B., Inc.....	50
Insert facing pages 34-35		Sinclair & Carroll Co.....	55
		Sinclair & Valentine Co.....	12
Gaetjens, Berger & Wirth, Inc... 56		Smith, Francis X., & Co.....	81
Gevaert Co. of America.....	51	Sullebarger, E. T., Co.....	79
Godfrey Roller Company.....	53	Swart-Reichel, Inc.....	75
Goerz, C. P., American Optical Co. 77			
		Taylor, W. A., & Co.....	73
Hammermill Paper Co.....	33	Triangle Ink & Color Co., Inc....	61
Agency: Batten, Barton, Durstine & Osborn, Inc., New York, N. Y.		Trussell Mfg. Co.....	6-41
Harris-Seybold-Potter Co..4th Cover		Agency: Renner Advertisers, Philadelphia, Pa.	
Agency: Baker and Baker & Associates, Inc., Cleveland, O.			
Henschel, C. B., Mfg. Co.....	81	Vulcan Proofing Co.....	37
Hilo Varnish Corp.....	73	Agency: Fred Glen Small, New York, N. Y.	
Hinson, McAuliffe Corp.....	77		
Holland, Thor.....	63	Webendorfer-Wills Co., Inc....	79
Hunt, Philip A., Co.....	59	Wesel Mfg. Co.....	49
		Western Litho Plate Graining Co. 63	
Illinois Plate Graining Co., Inc.. 63		"Where-To-Buy-It".....	67-72
International Press Cleaner & Mfg. Co.....	79		
International Printing Ink Corp., The.....	64	Zarkin Machine Co., Inc.....	9
		Zeiss, Carl.....	63

(The Advertiser's Index has been carefully checked but no responsibility can be assumed for any omission)

New N-W Catalog Issued

Norman-Willets Company, 318 West Washington Street, Chicago, call themselves "Headquarters for Every Known Photographic Need." This slogan is verified in the graphic arts field with the publication of Norman-Willets new catalog No. 42, which in its 120 pages lists hundreds of photographic items used in the graphic arts.

The new catalog has a striking cover done in four colors. Its inside pages contain not only full descriptions of items used in photo-lithography and other branches of the graphic arts, but also contain a number of useful notes on manipulation, on chemical formulae, etc.

The following are among the improved, revised, and new items listed in Catalog No. 42.

Improvements and Revisions:—Ilford Panchromatic Half-tone and Rapid Process Plates have been "stepped-up" in speed without loss of dot quality. Likewise, Ilford continuous tone panchromatic plates have been improved in speed and sensitivity.

New Items:—Norwil Plate Making Equipment; Howard Direct Color Camera; Speed Cameras and Accessories, including the new, fast Agfa films; Chemical Preparations such as Stripalak and others.

The first press to start in the morning is likely to be the one lubricated with a Bijur automatic lubricating system, according to the claims of Bijur Lubricating Corporation, of Long Island City, N. Y., in a newly issued bulletin entitled "The Travels of Modern Lubrication." A Bijur lubricating system automatically feeds any number of bearings the metered oil film each requires to function best, according to the claims made in the bulletin.

Ben Day, Inc., New York, are continuing to receive many requests for copies of the latest sheet addition to their tint-book which shows an issue of larger benday films, 13" x 16", both in straight lines, mechanical stipple, and new half-tone films.



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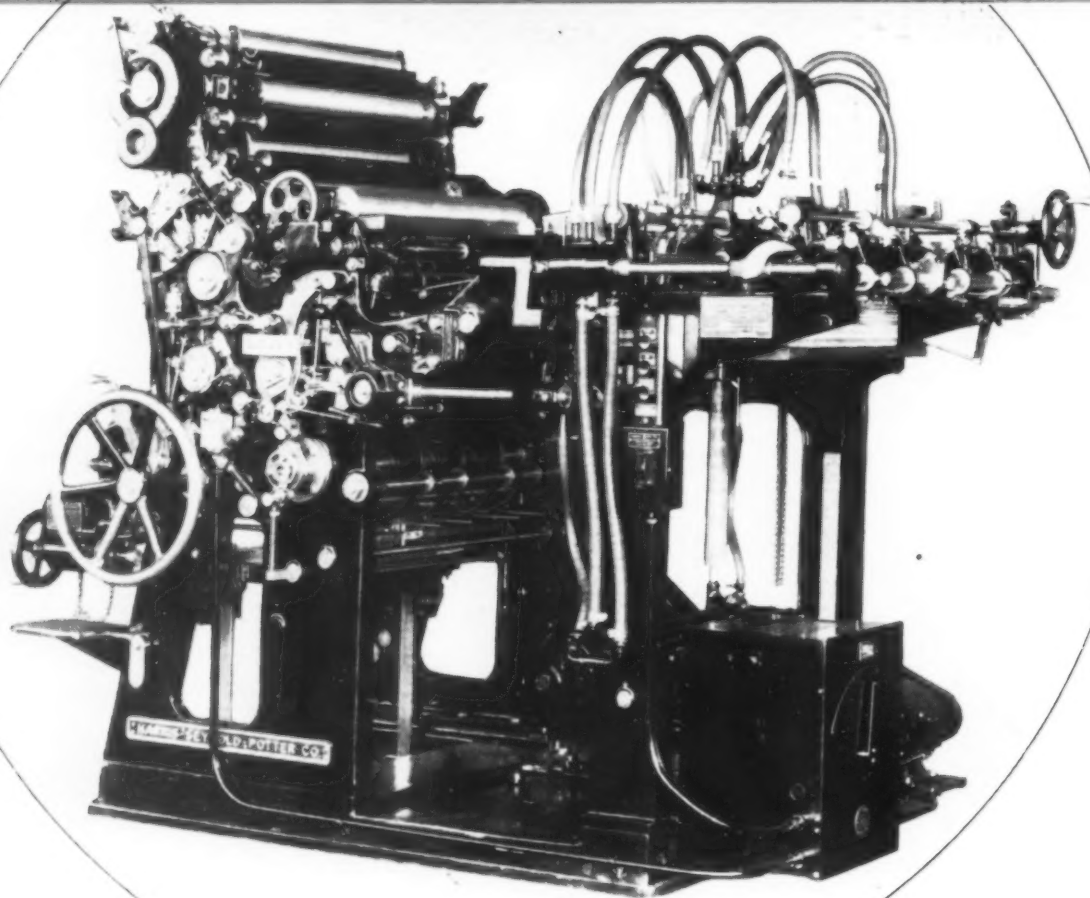
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